



## SEQUENCE LISTING

&lt;110&gt; Burgess et al.

&lt;120&gt; Novel Proteins and Nucleic Acids Encoding Same

&lt;130&gt; 21402-099

&lt;140&gt; 09/939,853

&lt;141&gt; 2001-08-27

&lt;150&gt; 60/228,191

&lt;151&gt; 2000-08-25

&lt;150&gt; 60/267,300

&lt;151&gt; 2001-02-08

&lt;150&gt; 60/269,961

&lt;151&gt; 2001-02-20

&lt;150&gt; 60/277,337

&lt;151&gt; 2001-03-20

&lt;160&gt; 159

&lt;170&gt; PatentIn Ver. 2.1

&lt;210&gt; 1

&lt;211&gt; 1065

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 1

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<212> PRT

<213> Ciona intestinalis

<400> 13

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His	Pro	Ala	Cys	Phe	Val	Cys	Ser	Val	Cys	Arg	Glu	Leu	Leu	Val	Asp	
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Pro	Ser	Lys	Ser	Phe	Arg	Asn	Arg	Glu	Arg	Gly	Ser	Leu	Ser	Gly	Ser	740	745	750
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Phe	Ser	Ser	Phe	Gln	Arg	Gly	Gln	Arg	Leu	Tyr	Ser	Ser	Ala	Arg	Phe	785	790	795
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Phe	Glu	Arg	Ser	Ala	Ala	Thr	Pro	Thr	Ser	Ser	Arg	Lys	Asn	Arg	Arg	885	890	895

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 Lys Val Pro Leu Val Asp Ser Ile Gly Asp Lys Tyr Arg Val Arg Gln  
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			820					825					830		
Pro	Asn	Ala	Gln	Arg	Ser	Gln	Phe	Arg	Glu	Gln	Lys	Leu	Glu	Leu	Asp
	835						840					845			
Cys	Ala	Ile	Ala	Arg	Arg	Asn	Pro	Lys	Pro	Gly	Lys	Thr	Cys	Ser	Lys
	850					855					860				
Leu	Ser	Gly	Lys	Ser	Thr	Cys	Ser	Lys	Lys	Leu	Lys	Arg	Thr	Arg	Ser
865					870					875					880
Thr	Asp	Phe	Ala	Phe	Glu	Arg	Ser	Ala	Ala	Thr	Pro	Thr	Ser	Ser	Arg
				885					890						895
Lys	Asn	Arg	Arg	Thr	Lys	Arg	Phe	Val	Glu	Asp	Glu	Glu	Glu	Asp	Gly
			900					905						910	
Trp	Cys	Ser	Thr	Cys	Thr	Ser	Ser	Ser	Asp	Asp	Ser	Asp	Tyr	Glu	Arg
	915						920					925			
Trp	Asp	Gly	Leu	Gly	Thr	Ser	Pro	Pro	Thr	Ser	Pro	Leu	Ser	Ala	Met
	930					935					940				
Arg	Arg	Gly	Ser	Ala	Pro	Val	Gly	Val	Arg	Val	Asn	Met	Thr	Arg	Arg
945					950					955					960
Gln	Pro	Pro	His	Pro	Phe	Leu	Ala	Asn	Ala	Asp	Ser	Ala	Leu	Ala	Ala
			965						970						975
Ser	Ala	Ala	Gly	Phe	Asn	Ser	Asn	Gly	Val	Tyr	Arg	Pro	Ser	Met	Pro
			980					985					990		
Arg	Asn	Phe	Phe	Phe	His	His	Val	Ala	Tyr	Ala	Leu	Gln	Ala	Glu	Thr
	995						1000					1005			
Ala	Glu	Lys	Ala	Leu	Tyr	Arg	His	Val	Thr	Thr	Asn	Ala	Val	Thr	Lys
	1010					1015					1020				
Thr	Ser	Glu	Ile	Asp	Arg	Lys	Ser	Ser	Glu	Thr	Lys	Ser	Trp	Arg	Ser
1025					1030					1035					1040
Gln	Asp	Ala	Ser	Tyr	Leu	Pro	Arg	Gly	Gly	Ser	Lys	Ala	Arg	Glu	Ser

1045	1050	1055
Ala Pro Ile Val Asp Thr Asn Thr Ser Ala		
1060	1065	
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<211> 785		
<212> PRT		
<213> Drosophila melanogaster		
<400> 15		
Met Gln Gln Ala Pro Gln Gln Gln Gln His Pro His Pro Pro Ser Ser		
1	5	10
		15
Ser Tyr Tyr Thr Gln Thr Glu Ser Glu Leu Leu Gln Ile Glu Ala Gly		
20	25	30
Gly Thr Gly Leu Thr Phe Ala Ser His Ser Gln Arg Pro Glu Ser Ala		
35	40	45
Ile Ser Gln Val Ala Ser Thr Ala His Leu Asp Val Pro Ser Ala Ala		
50	55	60
Ser Ser Gly Ser Gly Gly Ser Ala Val Ser Gly Gly Ser Gly Gly Ala		
65	70	75
		80
Pro Glu Ser Ala Gly Arg Phe Val Ser Pro Leu Gln Arg Arg His Cys		
85	90	95
Gln Pro Pro Ser His Leu Pro Leu Asn Ser Val Ala Ser Pro Leu Arg		
100	105	110
Thr Ala Ser Tyr Lys Ser Ala Ala Ala Val Ala Gly His Gly Phe His		
115	120	125
His Ser His His Gln Gln Leu Asp Phe Gln Arg Asn Ser Gln Ser Asp		
130	135	140
Asp Asp Ser Gly Cys Ala Leu Glu Glu Tyr Thr Trp Val Pro Pro Gly		
145	150	155
		160
Leu Arg Pro Asp Gln Val Arg Leu Tyr Phe Ser Gln Leu Pro Asp Asp		
165	170	175
Lys Val Pro Tyr Val Asn Ser Pro Gly Glu Lys Tyr Arg Val Lys Gln		
180	185	190
Leu Leu His Gln Leu Pro Pro Gln Asp Asn Glu Val Arg Tyr Cys His		
195	200	205
Ser Leu Ser Asp Glu Glu Arg Lys Glu Leu Arg Ile Phe Ser Ala Gln		
210	215	220
Arg Lys Arg Glu Ala Leu Gly Arg Gly Ala Val Arg Leu Leu Ser Asp		
225	230	235
		240

Glu Arg Pro Cys Lys Gly Cys Glu Glu Pro Leu Ser Gly Gly Asp Ile  
 245 250 255  
 Val Val Phe Ala Gln Arg Leu Gly Ala Gln Leu Cys Trp His Pro Gly  
 260 265 270  
 Cys Phe Val Cys Ser Val Cys Lys Glu Leu Leu Val Asp Leu Ile Tyr  
 275 280 285  
 Phe Gln Arg Asp Gly Asn Leu Tyr Cys Gly Arg His His Ala Glu Thr  
 290 295 300  
 Gln Lys Pro Arg Cys Ser Ala Cys Asp Glu Ile Ile Phe Ser Asp Glu  
 305 310 315 320  
 Cys Thr Glu Ala Glu Gly Arg Thr Trp His Met Lys His Phe Ala Cys  
 325 330 335  
 Gln Glu Cys Glu His Gln Leu Gly Gly Gln Arg Tyr Ile Met Arg Glu  
 340 345 350  
 Gly Lys Pro Tyr Cys Leu Ala Cys Phe Asp Thr Met Phe Ala Glu Tyr  
 355 360 365  
 Cys Asp Tyr Cys Gly Glu Val Ile Gly Val Asp Gln Gly Gln Met Ser  
 370 375 380  
 His Asp Gly Gln His Trp His Ala Thr Asp Gln Cys Phe Ser Cys Cys  
 385 390 395 400  
 Thr Cys Arg Cys Ser Leu Leu Gly Arg Pro Phe Leu Pro Arg Arg Gly  
 405 410 415  
 Thr Ile Tyr Cys Ser Ile Ala Cys Ser Lys Gly Glu Pro Pro Thr Pro  
 420 425 430  
 Ser Asp Thr Ser Ser Gly Pro Gln Leu Arg Pro Thr His Arg Ala Ser  
 435 440 445  
 Thr Ser Ser Gln Ile Ala Lys Ser Pro Arg Arg Gly Gly Glu Arg Glu  
 450 455 460  
 Arg Asp Pro Gly Arg Lys Ala His His Gly His Pro Lys Ala Thr Gly  
 465 470 475 480  
 Ser Ala Gly Asp Leu Leu Glu Arg Gln Glu Arg Gln Arg Met Glu Ala  
 485 490 495  
 Ala Gly Val Ala Asp Leu Leu Leu Gly Gly Gly Val Pro Gly Met Pro  
 500 505 510  
 Arg Pro Ala His Pro Pro Pro Ile Asp Leu Thr Glu Leu Gly Ile Ser  
 515 520 525  
 Leu Asp Asn Ile Cys Ala Gly Asp Lys Ser Ile Phe Gly Asp Thr Gln  
 530 535 540

Thr Leu Thr Asn Ser Met Pro Asp Met Leu Leu Ser Lys Ala Asp Asp  
 545 550 555 560  
 Ser His Ser Tyr Gln Ser Ile Asp Lys Ile Asn Leu Asn Ser Pro Ser  
 565 570 575  
 Asn Ser Asp Leu Thr Gln Ser Thr Gln Glu Leu Ala Asn Glu Leu Glu  
 580 585 590  
 Leu Asp Asn Glu Pro Val Arg Glu Leu Pro His Asp Gly Tyr Glu Gln  
 595 600 605  
 Leu Phe Ala Asn Asn Arg Asn Gln Glu His Pro Ala Glu Gln Tyr Asp  
 610 615 620  
 Asp Glu Gln Leu Asp Asn Arg Pro Met Lys Glu Val Arg Phe His Ser  
 625 630 635 640  
 Val Gln Asp Thr Met Ser Arg Ser Lys Ser Tyr Thr Asp Asn Ser Asn  
 645 650 655  
 Ala Arg Arg Arg Arg Arg Arg Arg Asn Gln Ser Arg Ser Ser Ser Glu  
 660 665 670  
 Met Gln Ile Asn Gln Thr Asn Leu Arg Leu His Asn Ala Gln Thr Gln  
 675 680 685  
 Val Gly Thr Thr Pro Leu Asn Leu Leu Asn Asn Leu Asp Asn Cys Asp  
 690 695 700  
 Val Ala Ser Ile Cys Ser Thr Cys Ser Ser Ser Ser Ser Ser Asp Met  
 705 710 715 720  
 Asp Asp Tyr Val Tyr Arg Leu Pro Ala Arg Lys His Tyr Gly Gly Val  
 725 730 735  
 Arg Val Ala Tyr Val Pro Asn Asp Ala Leu Ala Tyr Glu Arg Lys Lys  
 740 745 750  
 Lys Met Ala Gln Asp Ser Ser Leu Ala Pro Gly Ala Gly Asn Ala Ser  
 755 760 765  
 Val Gly Gly Ala Pro Ala Ile Met His Glu Ser Lys Asn Cys Thr Ile  
 770 775 780

Ser  
 785

<210> 16  
 <211> 615  
 <212> PRT  
 <213> Homo sapiens

<400> 16  
 Met Phe Ala Arg Gly Ser Arg Arg Arg Arg Ser Gly Arg Ala Pro Pro  
 1 5 10 15

Glu Ala Glu Asp Pro Asp Arg Gly Gln Pro Cys Asn Ser Cys Arg Glu  
                   20                                  25                                  30

Gln Cys Pro Gly Phe Leu Leu His Gly Trp Arg Lys Ile Cys Gln His  
                   35                                  40                                  45

Cys Lys Cys Pro Arg Glu Glu His Ala Val His Ala Val Pro Val Asp  
           50                                  55                                  60

Leu Glu Arg Ile Met Cys Arg Leu Ile Ser Asp Phe Gln Arg His Ser  
   65                                  70                                  75                                  80

Ile Ser Asp Asp Asp Ser Gly Cys Ala Ser Glu Glu Tyr Ala Trp Val  
                                   85                                  90                                  95

Pro Pro Gly Leu Lys Pro Glu Gln Val Tyr Gln Phe Phe Ser Cys Leu  
                   100                                  105                                  110

Pro Glu Asp Lys Val Pro Tyr Val Asn Ser Pro Gly Glu Lys Tyr Arg  
           115                                  120                                  125

Ile Lys Gln Leu Leu His Gln Leu Pro Pro His Asp Ser Glu Ala Gln  
   130                                  135                                  140

Tyr Cys Thr Ala Leu Glu Glu Glu Glu Lys Lys Glu Leu Arg Ala Phe  
  145                                  150                                  155                                  160

Ser Gln Gln Arg Lys Arg Glu Asn Leu Gly Arg Gly Ile Val Arg Ile  
                                   165                                  170                                  175

Phe Pro Val Thr Ile Thr Gly Ala Ile Cys Glu Glu Cys Gly Lys Gln  
                   180                                  185                                  190

Ile Gly Gly Gly Asp Ile Ala Val Phe Ala Ser Arg Ala Gly Leu Gly  
           195                                  200                                  205

Ala Cys Trp His Pro Gln Cys Phe Val Cys Thr Thr Cys Gln Glu Leu  
   210                                  215                                  220

Leu Val Asp Leu Ile Tyr Phe Tyr His Val Gly Lys Val Tyr Cys Gly  
  225                                  230                                  235                                  240

Arg His His Ala Glu Cys Leu Arg Pro Arg Cys Gln Ala Cys Asp Glu  
                   245                                  250                                  255

Ile Ile Phe Ser Pro Glu Cys Thr Glu Ala Glu Gly Arg His Trp His  
                   260                                  265                                  270

Met Asp His Phe Cys Cys Phe Glu Cys Glu Ala Ser Leu Gly Gly Gln  
           275                                  280                                  285

Arg Tyr Val Met Arg Gln Ser Arg Pro His Cys Cys Ala Cys Tyr Glu  
   290                                  295                                  300

Ala Arg His Ala Glu Tyr Cys Asp Gly Cys Gly Glu His Ile Gly Leu  
  305                                  310                                  315                                  320

Asp Gln Gly Gln Met Ala Tyr Glu Gly Gln His Trp His Ala Ser Asp  
 325 330 335

Arg Cys Phe Cys Cys Ser Arg Cys Gly Arg Ala Leu Leu Gly Arg Pro  
 340 345 350

Phe Leu Pro Arg Arg Gly Leu Ile Phe Cys Ser Arg Ala Cys Ser Leu  
 355 360 365

Gly Ser Glu Pro Thr Ala Pro Gly Pro Ser Arg Arg Ser Trp Ser Ala  
 370 375 380

Gly Pro Val Thr Ala Pro Leu Ala Ala Ser Thr Ala Ser Phe Ser Ala  
 385 390 395 400

Val Lys Gly Ala Ser Glu Thr Thr Thr Lys Gly Thr Ser Thr Glu Leu  
 405 410 415

Ala Pro Ala Thr Gly Pro Glu Glu Pro Ser Arg Phe Leu Arg Gly Ala  
 420 425 430

Pro His Arg His Ser Met Pro Glu Leu Gly Leu Arg Ser Val Pro Glu  
 435 440 445

Pro Pro Pro Glu Ser Pro Gly Gln Pro Asn Leu Arg Pro Asp Asp Ser  
 450 455 460

Ala Phe Gly Arg Gln Ser Thr Pro Arg Val Ser Phe Arg Asp Pro Leu  
 465 470 475 480

Val Ser Glu Gly Gly Pro Arg Arg Thr Leu Ser Ala Pro Pro Ala Gln  
 485 490 495

Arg Arg Arg Pro Arg Ser Pro Pro Pro Arg Ala Pro Ser Arg Arg Arg  
 500 505 510

His His His His Asn His His His His His Asn Arg His Pro Ser Arg  
 515 520 525

Arg Arg His Tyr Gln Cys Asp Ala Gly Ser Gly Ser Asp Ser Glu Ser  
 530 535 540

Cys Ser Ser Ser Pro Ser Ser Ser Ser Ser Glu Ser Ser Glu Asp Asp  
 545 550 555 560

Gly Phe Phe Leu Gly Glu Arg Ile Pro Leu Pro Pro His Leu Cys Arg  
 565 570 575

Pro Met Pro Ala Gln Asp Thr Ala Met Glu Thr Phe Asn Ser Pro Ser  
 580 585 590

Leu Ser Leu Pro Arg Asp Ser Arg Ala Gly Met Pro Arg Gln Ala Arg  
 595 600 605

Asp Lys Asn Cys Ile Val Ala  
 610 615



<210> 17  
 <211> 1028  
 <212> PRT  
 <213> *Drosophila melanogaster*

<400> 17  
 Glu Glu Glu Ser Pro Glu Gln Glu Ala Pro Lys Pro Ala Leu Pro Pro  
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 Lys Gln Lys Gln Gln Arg Pro Val Pro Pro Leu Pro Pro Pro Pro Ala  
 20 25 30  
 Asn Arg Val Thr Gln Asp Gln Gly Thr Gln Pro Ala Ala Pro Gln Val  
 35 40 45  
 Pro Leu Gln Pro Leu Thr Ala Gly Asp Leu Gln Phe Leu Asn Leu Ser  
 50 55 60  
 Leu Arg Gln Arg Ser Leu Pro Arg Ser Met Lys Pro Phe Lys Asp Ala  
 65 70 75 80  
 His Asp Ile Ser Phe Thr Phe Asn Glu Leu Asp Thr Ser Ala Glu Pro  
 85 90 95  
 Glu Val Ala Thr Gly Ala Ala Gln Gln Glu Ser Asn Glu Cys Arg Thr  
 100 105 110  
 Pro Leu Thr Gln Ile Ser Tyr Leu Gln Lys Ile Pro Thr Leu Pro Arg  
 115 120 125  
 His Phe Ser Pro Ser Gly Gln Gly Leu Ala Thr Pro Pro Ala Leu Gly  
 130 135 140  
 Ser Gly Gly Met Gly Leu Pro Ser Ser Ser Ser Ala Ser Ala Leu Tyr  
 145 150 155 160  
 Ala Ala Gln Ala Ala Ala Gly Ile Leu Pro Thr Ser Pro Leu Pro Leu  
 165 170 175  
 Gln Arg His Gln Gln Tyr Leu Pro Pro His His Gln Gln His Pro Gly  
 180 185 190  
 Ala Gly Met Gly Pro Gly Pro Gly Ser Gly Ala Ala Ala Gly Pro Pro  
 195 200 205  
 Leu Gly Pro Gln Tyr Ser Pro Gly Cys Ser Ala Asn Pro Lys Tyr Ser  
 210 215 220  
 Asn Ala Gln Leu Pro Pro Pro Pro His His His His Gln Leu Ser Pro  
 225 230 235 240  
 Ala Leu Ser Thr Pro Ser Pro Pro Ser Leu Leu His His Pro Ala Gly  
 245 250 255  
 Gly Thr Ser Ser Ala Ser Ala His Ala Pro Phe Leu Gly Gly Pro His

260	265	270
Met Asp Met Gln Arg Gln Ser His Ser Asp Asp Asp Ser Gly Cys Ala 275 280 285		
Leu Glu Glu Tyr Thr Trp Val Pro Pro Gly Leu Arg Pro Asp Gln Val 290 295 300		
Arg Leu Tyr Phe Ser Gln Ile Pro Asp Asp Lys Val Pro Tyr Val Asn 305 310 315 320		
Ser Pro Gly Glu Gln Tyr Arg Val Arg Gln Leu Leu His Gln Leu Pro 325 330 335		
Pro His Asp Asn Glu Val Arg Tyr Cys His Ser Leu Thr Asp Glu Glu 340 345 350		
Arg Lys Glu Leu Arg Leu Phe Ser Thr Gln Arg Lys Arg Asp Ala Leu 355 360 365		
Gly Arg Gly Asn Val Arg Gln Leu Met Ser Ala Arg Pro Cys Asp Gly 370 375 380		
Cys Asp Asp Leu Ile Ser Thr Gly Asp Ile Ala Val Phe Ala Thr Arg 385 390 395 400		
Leu Gly Pro Asn Ala Ser Trp His Pro Ala Cys Phe Ala Cys Ser Val 405 410 415		
Cys Arg Glu Leu Leu Val Asp Leu Ile Tyr Phe His Arg Asp Gly Arg 420 425 430		
Met Tyr Cys Gly Arg His His Ala Glu Thr Leu Lys Pro Arg Cys Ser 435 440 445		
Ala Cys Asp Glu Ile Ile Leu Ala Asp Glu Cys Thr Glu Ala Glu Gly 450 455 460		
Arg Ala Trp His Met Asn His Phe Ala Cys His Glu Cys Asp Lys Gln 465 470 475 480		
Leu Gly Gly Gln Arg Tyr Ile Met Arg Glu Gly Lys Pro Tyr Cys Leu 485 490 495		
His Cys Phe Asp Ala Met Phe Ala Glu Tyr Cys Asp Tyr Cys Gly Glu 500 505 510		
Ala Ile Gly Val Asp Gln Gly Gln Met Ser His Asp Gly Gln His Trp 515 520 525		
His Ala Thr Asp Glu Cys Phe Ser Cys Asn Thr Cys Arg Cys Ser Leu 530 535 540		
Leu Gly Arg Ala Phe Leu Pro Arg Arg Gly Ala Ile Tyr Cys Ser Ile 545 550 555 560		
Ala Cys Ser Lys Gly Glu Pro Pro Thr Pro Ser Asp Ser Ser Gly Thr		

[illegible]



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 tatagttcac taaaactgca caaaatgtgg aaaggggtggc tgaggaaaac atcctgattt 1200  
 tgcttgcttt tatatatgtt atgtgtagat gaataaagtg tttgatcctt tttgacaaaa 1260  
 aaaaaaaaaa aaaaaaaaaa 1278

<210> 19

<211> 337

<212> PRT

<213> Homo sapiens

<400> 19

Met Ala Leu Gln Thr Leu Gln Ser Ser Trp Val Thr Phe Arg Lys Ile  
 1 5 10 15

Leu Ser His Phe Pro Glu Glu Leu Ser Leu Ala Phe Val Tyr Gly Ser  
 20 25 30

Gly Val Tyr Arg Gln Ala Gly Pro Ser Ser Asp Gln Lys Asn Ala Met  
 35 40 45

Leu Asp Phe Val Phe Thr Val Asp Asp Pro Val Ala Trp His Ser Lys  
 50 55 60

Asn Leu Lys Lys Asn Trp Ser His Tyr Ser Phe Leu Lys Val Leu Gly  
 65 70 75 80

Pro Lys Ile Ile Thr Ser Ile Gln Asn Asn Tyr Gly Ala Gly Val Tyr  
 85 90 95

Tyr Asn Ser Leu Ile Met Cys Asn Gly Arg Leu Ile Lys Tyr Gly Val  
 100 105 110

Ile Ser Thr Asn Val Leu Ile Glu Asp Leu Leu Asn Trp Asn Asn Leu  
 115 120 125

Tyr Ile Ala Gly Arg Leu Gln Lys Pro Val Lys Ile Ile Ser Val Asn  
 130 135 140

Glu Asp Val Thr Leu Arg Ser Ala Leu Asp Arg Asn Leu Lys Ser Ala  
 145 150 155 160

Val Thr Ala Ala Phe Leu Met Leu Pro Glu Ser Phe Ser Glu Glu Asp  
 165 170 175

Leu Phe Ile Glu Ile Ala Gly Leu Ser Tyr Ser Gly Asp Phe Arg Met  
 180 185 190

Val Val Gly Glu Asp Lys Thr Lys Val Leu Asn Ile Val Lys Pro Asn  
 195 200 205

Ile Ala His Phe Arg Glu Leu Tyr Gly Ser Ile Leu Gln Glu Asn Pro  
 210 215 220

Gln Val Val Tyr Lys Ser Gln Gln Gly Trp Leu Glu Ile Asp Lys Ser  
 225 230 235 240

Pro Glu Gly Gln Phe Thr Gln Leu Met Thr Leu Pro Lys Thr Leu Gln  
 245 250 255  
 Gln Gln Ile Asn His Ile Met Asp Pro Pro Gly Lys Asn Arg Asp Val  
 260 265 270  
 Glu Glu Thr Leu Phe Gln Val Ala His Asp Pro Asp Cys Gly Asp Val  
 275 280 285  
 Val Arg Leu Gly Leu Ser Ala Ile Val Arg Pro Ser Ser Ile Arg Gln  
 290 295 300  
 Ser Thr Lys Gly Ile Phe Thr Ala Gly Leu Lys Lys Ser Val Ile Tyr  
 305 310 315 320  
 Ser Ser Leu Lys Leu His Lys Met Trp Lys Gly Trp Leu Arg Lys Thr  
 325 330 335

Ser

<210> 20  
 <211> 1278  
 <212> DNA  
 <213> Homo sapiens

<400> 20  
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 catatataaa agcaagcaaa atcaggatgt ttctctcagc caccctttcc acattttgtg 120  
 cagtttttagt gaactataaa tctactgactt cttcaggcca gcagtaaaaa tgcctttcgt 180  
 gctctgtctt atactagacg gtctcacgat tgctgaaagc cctagtcgca ccacatctcc 240  
 acagtcggga tcatgagcca cttggaataa agtttcttcc acatctctgt tttttccagg 300  
 aggggtccata atatgattta tctgttgctg taagggtttg ggcaatgtca tcagctgagt 360  
 gaactgtcct tctgggcttt tatctatctc cagccagcct tgctggcttt tatacaccac 420  
 ttgaggattt tctgttagta tgctgccata gagctctcga aagtgggcta tattgggctt 480  
 cacaatatc aacacttttg ttttatcttc tccaaccacc atccgaaagt cacctgaata 540  
 ggagagaccg gcaatctcta tgaagaggtc ttcttcagaa aagctttcgg ggagcatgag 600  
 gaaagcagcg gtcacagcac tcttcagatt tctatcgagg gctgatctaa gagtgacatc 660  
 ctggttcact gagataattt tcaccgggtt ttggagtcgt ccagcaatgt ataagttatt 720  
 ccagttgagg agatcttcaa tcagaacggt agtgctaata actccatatt tgataagcct 780  
 accattacac atgatcaatg aattgtagta aactccagcg ccatagttat tctggatgga 840  
 cgtgataatc ttgggcccta aaacttttag gaaagagtag tgactccaat ttttcttcag 900  
 gttctttgaa tgccatgcga cagggtcatc tactgtgaac acaaagtcca gcatagcatt 960  
 cttctggtct gaactgggcc ctgcctggcg gtacaccccg gagccgtaga cgaaagccag 1020  
 actcagctcc tcggggaagt gagacaggat cttgcggaag gtcaccacag agctctgcag 1080  
 cgtctgcagc gccatggggt cgaggctaac aggggacact cagcgcagca gggcgaggac 1140  
 aaccgggagg ggaacagaca ccgggtaggc gggttagggg gggaaatgga agtcggagac 1200  
 tggatcgagg gacacaaggc tgagtgtggg gtgggactgc aaggacacgc aaggattggg 1260  
 gcgttgggcc acgaagag 1278

<210> 21  
 <211> 367  
 <212> PRT  
 <213> Mus musculus

<400> 21

Gly Thr Gly Arg Lys Arg Gly Pro His Asp Arg Glu Leu Arg Ala Gln  
1 5 10 15

Gly Arg His Ser Thr Val Cys Pro Thr Gly Gly Pro Pro Ala His Gly  
20 25 30

Ala Ala Gly Leu His Ser Ser Gly Val Gly Leu Arg Arg Ile Leu Ala  
35 40 45

His Phe Pro Glu Asp Leu Ser Leu Ala Phe Ala Tyr Gly Ser Ala Val  
50 55 60

Tyr Arg Gln Ala Gly Pro Ser Ala His Gln Glu Asn Pro Met Leu Asp  
65 70 75 80

Leu Val Phe Thr Val Asp Asp Pro Val Ala Trp His Ala Met Asn Leu  
85 90 95

Lys Lys Asn Trp Ser His Tyr Ser Phe Leu Lys Leu Leu Gly Pro Arg  
100 105 110

Ile Ile Ser Ser Ile Gln Asn Asn Tyr Gly Ala Gly Val Tyr Phe Asn  
115 120 125

Pro Leu Ile Arg Cys Asp Gly Lys Leu Ile Lys Tyr Gly Val Ile Ser  
130 135 140

Thr Gly Thr Leu Ile Glu Asp Leu Leu Asn Trp Asn Asn Leu Tyr Ile  
145 150 155 160

Ala Gly Arg Leu Gln Lys Pro Val Lys Ile Val Ser Met Asn Glu Asn  
165 170 175

Met Ala Leu Arg Ala Ala Leu Asp Lys Asn Leu Arg Ser Ala Val Thr  
180 185 190

Thr Ala Cys Leu Met Leu Pro Glu Ser Phe Ser Glu Glu Asp Leu Phe  
195 200 205

Ile Glu Ile Ala Gly Leu Ser Tyr Ser Gly Asp Phe Arg Met Val Ile  
210 215 220

Gly Glu Glu Lys Ser Lys Val Leu Asn Ile Val Lys Pro Asn Val Gly  
225 230 235 240

His Phe Arg Glu Leu Tyr Glu Ser Ile Leu Gln Lys Asp Pro Gln Val  
245 250 255

Val Tyr Lys Met His Gln Gly Gln Leu Glu Ile Asp Lys Ser Pro Glu  
260 265 270

Gly Gln Phe Thr Gln Leu Met Thr Leu Pro Arg Thr Leu Gln Gln Gln  
275 280 285

Ile Asn His Ile Met Asp Pro Pro Gly Arg Asn Arg Asp Val Glu Glu  
290 295 300

Thr Leu Leu Gln Val Ala Gln Asp Pro Asp Cys Gly Asp Val Val Arg  
 305 310 315 320

Leu Ala Ile Ser Ser Ile Val Arg Pro Ser Ser Ile Arg Gln Ser Thr  
 325 330 335

Lys Gly Leu Phe Thr Ala Gly Met Lys Lys Ser Val Ile Tyr Ser Ser  
 340 345 350

Arg Lys Leu Asn Lys Met Trp Lys Gly Trp Met Ser Lys Ala Ser  
 355 360 365

<210> 22

<211> 383

<212> PRT

<213> Schizosaccharomyces pombe

<400> 22

Met Ile Phe Gly Lys Thr His Phe Leu Ser Tyr Asn Ile Leu Arg Tyr  
 1 5 10 15

Ser Thr Lys Arg Trp Met Asn Arg His Ser Tyr Ser His His Ala Lys  
 20 25 30

Cys Thr Val Ala Gln Leu Leu Lys Gln Asn Leu Leu Thr Phe Glu Asn  
 35 40 45

Gln Arg Ile Gln Pro Glu Glu Glu Leu Lys Glu Asn Leu Thr Lys Val  
 50 55 60

Val Asn Tyr Phe Gln Ala Pro Ile Asp Val Ala Val Gly Tyr Gly Ser  
 65 70 75 80

Gly Val Phe Arg Gln Ala Gly Tyr Ser Gln Lys Glu Asn Pro Met Ile  
 85 90 95

Asp Phe Ile Phe Gln Val Glu Asp Pro Val Lys Trp His Lys Ile Asn  
 100 105 110

Leu Gln Gln Asn Pro Ser His Tyr Ser Phe Val Lys Asn Phe Gly Pro  
 115 120 125

Gly Phe Val Ser Thr Leu Gln Glu Ser Phe Gly Thr Gly Val Tyr Tyr  
 130 135 140

Asn Thr His Val Glu Val Glu Gly Asn Ile Ile Lys Tyr Gly Val Thr  
 145 150 155 160

Ser Lys Lys Asp Val Tyr Glu Asp Leu Lys Asn Trp Asn Thr Met Tyr  
 165 170 175

Leu Ala Gly Arg Phe Gln Lys Pro Val Val Ile Leu Lys Gly Glu Asp  
 180 185 190

Glu Phe Tyr Lys Glu Asn Ser Tyr Asn Leu Ser Ser Ala Leu His Val



195	200	205
Gly Leu Leu Met Leu Ala Asp Arg Phe Thr Glu Phe Asp Leu Tyr Lys 210 215 220		
Thr Ile Val Ser Leu Ser Tyr Leu Gly Asp Ile Arg Met Ser Phe Phe 225 230 235 240		
Ala Glu Asn Pro Arg Lys Val Glu Asn Ile Val Ser Lys Gln Ile Ala 245 250 255		
Phe Phe Arg Lys Leu Tyr Leu Pro Leu Leu Tyr Ala Glu Pro Gly Val 260 265 270		
His Phe Ile Glu Ser Ser Glu Val Leu Lys Ser Met Asp Pro Ser Asp 275 280 285		
Asn Ser Arg Tyr Leu Ser Phe His Gln Asn Ile Thr Lys Asp Ser Ile 290 295 300		
Ser Arg Leu Leu Asn Gly Leu Pro Leu Asn Leu Val Lys Ile Leu Gly 305 310 315 320		
Leu Lys Pro Asp Thr Ser Ser Phe Glu Lys Cys Ala Glu Leu Met Leu 325 330 335		
Thr Asn Gln Ile Ser Thr Arg Ser Leu Leu Ile Ser Lys Ser Ile Lys 340 345 350		
Lys Leu Thr Ser Phe Ser Ile Leu Thr Gln Ser Ile Lys Gly Ile Phe 355 360 365		
Thr Ala Arg Cys His Ser Phe Arg Trp Tyr Met Ser Met Arg Ser 370 375 380		

<210> 23  
 <211> 274  
 <212> PRT  
 <213> Caenorhabditis elegans

<400> 23  
 Met Asp Glu Tyr Arg Glu Leu Ile Ser Val Leu Pro Leu Glu Thr Val  
 1 5 10 15  
 Glu Tyr Ala Phe Ala Tyr Gly Ser Gly Ala Ile Gln Gln Gln Asn Glu  
 20 25 30  
 Asp Lys Ser Glu Lys Met Val Asp Phe Val Ile Val Thr Lys Asn Ala  
 35 40 45  
 Gln Glu Phe His Arg Asp Asn Ile Leu Lys Asn Pro Gln His Tyr Ser  
 50 55 60  
 Leu Leu Arg Leu Met Gly Pro Lys Met Ile Glu Lys Ile Gln Cys Asn  
 65 70 75 80

Phe Ala Ala Arg Val Tyr Tyr Asn Thr His Val Lys Val Gly Lys Arg  
                             85                            90                            95  
 Lys Ile Lys Tyr Gly Val Ile Ser Tyr Glu Asn Val Lys Gln Asp Leu  
                             100                            105                            110  
 Leu Asp Trp Arg Trp Ile Tyr Ile Ser Gly Arg Leu His Lys Pro Val  
                             115                            120                            125  
 Leu Glu Val Ile Lys Pro Arg Gln Asp Met Cys Asp Leu Val Thr Glu  
                             130                            135                            140  
 Asn Arg Arg Ser Ala Leu His Ser Ser Leu Leu Leu Leu Pro Glu Ser  
                             145                            150                            155                            160  
 Phe Thr Leu Lys Gln Leu Phe His Lys Ile Val Gly Leu Ser Tyr Thr  
                             165                            170                            175  
 Gly Asp Phe Arg Met Val Val Gly Glu Asp Lys Asn Lys Ile Asn Lys  
                             180                            185                            190  
 Ile Val Glu Gly Asn Tyr Glu Glu Leu Leu Arg Val Tyr Glu Pro Leu  
                             195                            200                            205  
 Met Asn Asp Asp Ala Arg Leu Ser Val Ile Phe Ser Leu Ala His Arg  
                             210                            215                            220  
 His Asp Val Ala Ala Thr Val Glu Thr Ala Ile Gly Gly Ile Ile Arg  
                             225                            230                            235                            240  
 Pro Val Ser Leu Ser Gln Thr Ala Lys Asn Ala Phe Ser Ala Gly Val  
                             245                            250                            255  
 Thr Arg Ser Ile Ile Tyr Ser Met Ala Lys Met Ser Lys Phe Leu Lys  
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Ser Lys

<210> 24  
 <211> 647  
 <212> PRT  
 <213> *Drosophila melanogaster*

<400> 24  
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 Val Ser Tyr Met Phe Ala Tyr Gly Ser Gly Val Lys Gln Gln Glu Gly  
                             20                            25                            30  
 Tyr Gly Lys Val Gly Asn Gly Asn Asn Leu Arg Pro Pro Pro Gly Thr  
                             35                            40                            45  
 Val Val Asp Leu Val Phe Cys Val Arg Asp Ala Arg Gly Phe His Ala  
                             50                            55                            60

Glu	Asn	Leu	His	Arg	His	Pro	Asp	His	Tyr	Ser	Ala	Leu	Arg	His	Leu	65	70	75	80
Gly	Pro	Asn	Phe	Val	Ala	Lys	Tyr	Gln	Glu	Arg	Leu	Gly	Ala	Gly	Val	85	90	95	
Tyr	Cys	Asn	Thr	Leu	Val	Pro	Leu	Pro	Asp	Val	Gly	Ile	Thr	Ile	Lys	100	105	110	
Tyr	Gly	Val	Val	Ser	Gln	Glu	Glu	Leu	Leu	Glu	Asp	Leu	Leu	Asp	Trp	115	120	125	
Arg	His	Leu	Tyr	Leu	Ala	Gly	Arg	Leu	His	Lys	Pro	Val	Thr	Asn	Leu	130	135	140	
Val	Asn	Pro	Ser	Asp	Asn	Pro	Pro	Leu	Lys	Ala	Ala	Leu	Glu	Arg	Asn	145	150	155	160
Leu	Val	Ser	Ala	Leu	Gln	Val	Ala	Leu	Leu	Leu	Pro	Glu	Lys	Phe	165	170	175		
Thr	Ala	Tyr	Gly	Leu	Phe	His	Thr	Ile	Ala	Gly	Leu	Ser	Tyr	Lys	Gly	180	185	190	
Asp	Phe	Arg	Met	Ile	Phe	Gly	Glu	Asn	Lys	Gln	Lys	Val	His	Asn	Ile	195	200	205	
Val	Ser	Pro	Gln	Ile	Asn	Asp	Phe	Phe	Ala	Leu	Tyr	Gln	Pro	Ser	Leu	210	215	220	
Gly	Gln	Leu	Ser	Asp	Tyr	Val	Ala	Val	Asn	Met	Lys	Gly	Gln	Glu	Pro	225	230	235	240
Gly	Ser	Arg	Lys	Pro	Ala	Ile	Ile	Phe	Glu	Gln	Asp	Lys	Ser	Ser	Ser	245	250	255	
Ala	Thr	Cys	Gln	His	Leu	Arg	Gln	Leu	Pro	Arg	Glu	Leu	Gln	Lys	Arg	260	265	270	
Leu	Gln	Arg	Asn	Ala	Ala	Cys	Arg	Gly	Asp	Tyr	Thr	Gln	Val	Val	Asn	275	280	285	
His	Leu	Ser	Met	Ala	Ser	Gln	Leu	Pro	Glu	Val	Leu	Gln	Ala	Ser	Val	290	295	300	
Asn	Asp	Ile	Ile	Met	Ser	Ser	Asp	Asp	Asn	Ser	Ser	Asp	Ser	Asn	Ser	305	310	315	320
Ser	Ser	Asp	Glu	Arg	Gln	Arg	Lys	Arg	Lys	Leu	Lys	Lys	His	Ser	Lys	325	330	335	
Asp	Val	Asp	Lys	Ser	Lys	Lys	Lys	Lys	Ser	Lys	Lys	His	Lys	Lys	Glu	340	345	350	
Lys	Arg	Arg	His	Lys	Glu	Lys	Lys	Arg	Ser	Lys	His	Glu	Glu	Glu	Pro	355	360	365	

Pro Val Pro Tyr Thr Gln Pro Pro His Leu Ile Asn Ala Ser Pro Pro  
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 Asp Val Ala Thr Asn Asn Glu Asp Ser Phe Gly Pro Ala Leu Pro Pro  
 385 390 395 400  
 His Leu Arg Lys Thr Gln Gln Pro Glu Leu Pro Glu Gln Ser Gln Pro  
 405 410 415  
 Ala Pro Gln Pro Gln Ala Met Ile Gly Pro Val Leu Pro Ser Asn Leu  
 420 425 430  
 Thr Arg Glu Lys Ser Pro Thr Lys Glu Ala Glu Ala Glu Asp Asp Asp  
 435 440 445  
 Asp Leu Ala Gly Thr Phe Gly Pro Leu Pro Asn Ala Ser Gln Val Ala  
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 Leu Glu Glu Arg Ala Leu Ala Leu Lys Leu Ala Ala Leu Glu Gly Gly  
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 Gly Leu Gly Thr Ser Thr Asp Gln Asp Val Arg Glu Glu Trp Met Leu  
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 Met Lys Arg Thr Phe Tyr Gln Gly Lys Glu Arg Pro Asp Phe Ser Asp  
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 Ser Gly Pro Lys Ser Leu Ser Ser Lys Glu Leu Glu Gln Met Ala Gln  
 545 550 555 560  
 Val Lys Tyr Glu Gln Gln Arg Asp Asp Glu Gln Glu Ser Met Ala Lys  
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 595 600 605  
 Phe Ser Arg Asp Val Asp Leu Lys Leu Asn Lys Ile Asp Lys Asn Gln  
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<210> 25

<400> 25																
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			20					25					30			
Asn	Gln	Asp	Lys	Ser	Lys	Met	Val	Asp	Tyr	Ile	Leu	Gly	Val	Ser	Asp	
		35					40					45				
Pro	Ile	Lys	Trp	His	Ser	Ala	Asn	Leu	Lys	Met	Asn	Ser	Asp	His	Tyr	
	50					55					60					
Ala	Ser	Trp	Met	Val	His	Leu	Gly	Gly	Ala	Arg	Leu	Ile	Thr	Asn	Val	
65					70					75					80	
Ala	Asp	Lys	Val	Gly	Val	Gly	Val	His	Phe	Asn	Pro	Phe	Val	Asn	Trp	
				85					90					95		
Asn	Asp	Arg	Lys	Leu	Lys	Tyr	Gly	Val	Val	Arg	Met	His	Asp	Leu	Val	
			100					105					110			
Gln	Asp	Ile	Leu	Asp	Trp	Lys	Arg	Phe	Tyr	Leu	Ser	Gly	Arg	Leu	Gln	
		115					120					125				
Lys	Pro	Val	His	Met	Leu	Val	Asp	Asn	Leu	Asp	Ile	Glu	Asp	Val	Asn	
	130					135					140					
Ser	Val	Asn	Lys	Arg	Ala	Ala	Ile	Ser	Ala	Ala	Leu	Leu	Leu	Leu	Pro	
145					150					155					160	
Ser	Lys	Phe	Thr	Glu	Glu	Asp	Leu	Tyr	Ala	Lys	Ile	Cys	Ser	Leu	Ser	
				165					170					175		
Tyr	Met	Gly	Asp	Leu	Arg	Met	Phe	Phe	Ala	Glu	Asp	Thr	Asn	Lys	Val	
			180					185					190			
Asn	Lys	Ile	Val	Lys	Gly	Gln	Phe	Asp	Leu	Phe	Gln	Ser	Met	Tyr	Lys	
		195					200					205				
Pro	Phe	Leu	Glu	Glu	Cys	Glu	Thr	Lys	Asn	Leu	Leu	Arg	Phe	Ser	Ser	
	210					215						220				
Ala	Glu	Ala	Ser	His	Thr	Lys	Leu	Val	Gln	Asp	Ser	Ser	Leu	Ser	Ala	
225					230					235					240	
Thr	Arg	Ser	Leu	Val	Ser	Ser	Leu	Pro	Ala	Ser	Val	Arg	Ser	Gln	Met	
				245					250					255		
Gly	Lys	Ser	Leu	Gly	Glu	Lys	Lys	Phe	Val	Ser	Glu	Thr	Gly	Arg	Val	
			260					265					270			
Met	Gly	Glu	Val	Cys	Ile	Ser	Ser	Arg	Glu	Glu	Ala	Ala	Lys	Cys	Met	

275                      280                      285

Glu Lys Val Met Arg Arg Arg Val Met Val Ser Ser Gly Arg Gln Ala  
       290                                      295                                      300

Val Ser Gly Phe Leu Ala Ala Gly Ala Ile Asn Ala Thr Met Tyr Leu  
       305                                      310                                      315                                      320

Ser Gln Lys Met Arg Lys Ala Trp Asn Ser Arg Ala  
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<210> 26  
 <211> 983  
 <212> DNA  
 <213> Homo sapiens

<400> 26

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 <212> PRT  
 <213> Homo sapiens

<400> 27

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                                     20                                      25                                      30

Leu Lys Leu Glu Arg Leu Met Lys Asn Pro Asp Lys Ala Val Pro Ile  
                                     35                                      40                                      45

Pro Glu Lys Met Ser Glu Trp Ala Pro Arg Pro Pro Pro Glu Phe Val  
                                     50                                      55                                      60

Arg Asp Val Met Gly Ser Ser Ala Gly Ala Gly Ser Gly Glu Phe His  
       65                                      70                                      75                                      80

Val Tyr Arg His Leu Arg Arg Arg Glu Tyr Gln Arg Gln Asp Tyr Met  
85 90 95

Asp Ala Met Ala Glu Lys Gln Lys Leu Asp Ala Glu Phe Gln Lys Arg  
100 105 110

Leu Glu Lys Asn Lys Ile Ala Ala Glu Glu Gln Thr Ala Lys Arg Arg  
115 120 125

Lys Lys Arg Gln Lys Leu Lys Glu Lys Lys Leu Leu Ala Lys Lys Met  
130 135 140

Lys Leu Glu Gln Lys Lys Gln Glu Gly Pro Gly Gln Pro Lys Glu Gln  
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Gly Ser Ser Ser Ser Ala Glu Ala Ser Gly Thr Glu Glu Glu Glu Glu  
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Val Pro Ser Phe Thr Met Gly Arg  
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<210> 28  
<211> 983  
<212> DNA  
<213> Homo sapiens

<400> 28  
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caagtatgac gacacagccg cgg 983

<210> 29  
<211> 184  
<212> PRT  
<213> Homo sapiens

<400> 29  
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 Leu Lys Leu Glu Arg Leu Met Lys Asn Pro Asp Lys Ala Val Pro Ile  
                   35                                  40                                  45  
 Pro Glu Lys Met Ser Glu Trp Ala Pro Arg Pro Pro Pro Glu Phe Val  
                   50                                  55                                  60  
 Arg Asp Val Met Gly Ser Ser Ala Gly Ala Gly Ser Gly Glu Phe His  
                   65                                  70                                  75                                  80  
 Val Tyr Arg His Leu Arg Arg Arg Glu Tyr Gln Arg Gln Asp Tyr Met  
                                   85                                  90                                  95  
 Asp Ala Met Ala Glu Lys Gln Lys Leu Asp Ala Glu Phe Gln Lys Arg  
                   100                                  105                                  110  
 Leu Glu Lys Asn Lys Ile Ala Ala Glu Glu Gln Thr Ala Lys Arg Arg  
                   115                                  120                                  125  
 Lys Lys Arg Gln Lys Leu Lys Glu Lys Lys Leu Leu Ala Lys Lys Met  
                   130                                  135                                  140  
 Lys Leu Glu Gln Lys Lys Gln Glu Gly Pro Gly Gln Pro Lys Glu Gln  
                   145                                  150                                  155                                  160  
 Gly Ser Ser Ser Ser Ala Glu Ala Ser Gly Thr Glu Glu Glu Glu Glu  
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 Val Pro Ser Phe Thr Met Gly Arg  
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<210> 30  
 <211> 186  
 <212> PRT  
 <213> Mus musculus

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                   20                                  25                                  30  
 Leu Lys Leu Glu Arg Leu Met Lys Asn Pro Asp Lys Ala Val Pro Ile  
                   35                                  40                                  45  
 Pro Glu Lys Met Asn Glu Trp Ala Pro Arg Ala Pro Pro Glu Phe Val  
                   50                                  55                                  60  
 Arg Asp Val Met Gly Ser Ser Ala Gly Ala Gly Ser Gly Glu Phe His  
                   65                                  70                                  75                                  80  
 Val Tyr Arg His Leu Arg Arg Arg Glu Tyr Gln Arg Gln Asp Tyr Met  
                                   85                                  90                                  95



Asp Ala Met Ala Glu Lys Gln Lys Leu Asp Ala Glu Phe Gln Lys Arg  
100 105 110

Leu Glu Lys Asn Lys Ile Ala Ala Glu Glu Gln Thr Ala Lys Arg Arg  
115 120 125

Lys Lys Arg Gln Lys Leu Lys Glu Lys Lys Leu Leu Ala Lys Lys Met  
130 135 140

Lys Leu Glu Gln Lys Lys Gln Lys Glu Glu Pro Ser Gln Cys Gln Glu  
145 150 155 160

Gln His Ala Ser Ser Ser Asp Glu Ala Ser Glu Thr Glu Glu Glu Glu  
165 170 175

Glu Glu Pro Ser Val Leu Ile Met Gly Arg  
180 185

<210> 31

<211> 186

<212> PRT

<213> Mus musculus

<400> 31

Met Ala Ser Pro Ala Ala Ala Ser Val Arg Pro Pro Arg Pro Lys Lys  
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Glu Pro Gln Thr Leu Val Ile Pro Lys Asn Ala Ala Glu Glu Gln Lys  
20 25 30

Leu Lys Leu Glu Arg Leu Met Lys Asn Pro Asp Lys Ala Val Pro Ile  
35 40 45

Pro Glu Lys Met Asn Glu Trp Ala Pro Arg Ala Pro Pro Glu Phe Val  
50 55 60

Arg Asp Val Met Gly Ser Ser Ala Gly Ala Gly Ser Gly Glu Phe His  
65 70 75 80

Val Tyr Arg His Leu Arg Arg Arg Glu Tyr Gln Arg Gln Asp Tyr Met  
85 90 95

Asp Ala Met Ala Glu Lys Gln Lys Leu Asp Ala Glu Phe Gln Lys Arg  
100 105 110

Leu Glu Lys Asn Lys Ile Ala Ala Glu Glu Gln Thr Ala Lys Arg Arg  
115 120 125

Lys Lys Arg Gln Lys Leu Lys Glu Lys Lys Leu Leu Ala Lys Lys Met  
130 135 140

Lys Leu Glu Gln Lys Lys Gln Lys Glu Glu Pro Ser Gln Cys Gln Glu  
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Gln His Ala Ser Ser Ser Asp Glu Ala Ser Glu Thr Glu Glu Glu Glu

165	170	175
Glu Glu Pro Ser Val Val Ile Met Gly Arg		
180	185	
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<212> PRT		
<213> Mus musculus		
<400> 32		
Met Lys Asn Pro Asp Lys Ala Val Pro Ile Pro Glu Lys Met Asn Glu		
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Trp Ala Pro Arg Ala Pro Pro Glu Phe Val Arg Asp Val Met Gly Ser		
20	25	30
Ser Ala Gly Ala Gly Ser Gly Glu Phe His Val Tyr Arg His Leu Arg		
35	40	45
Arg Arg Glu Tyr Gln Arg Gln Asp Tyr Met Asp Ala Met Ala Glu Lys		
50	55	60
Gln Lys Leu Asp Ala Glu Phe Gln Lys Arg Leu Glu Lys Asn Lys Ile		
65	70	75 80
Ala Ala Glu Glu Gln Thr Ala Lys Arg Arg Lys Lys Arg Gln Lys Leu		
85	90	95
Lys Glu Lys Lys Leu Leu Ala Lys Lys Met Lys Leu Glu Gln Lys Lys		
100	105	110
Gln Lys Glu Glu Pro Ser Gln Cys Gln Glu Gln His Ala Ser Ser Ser		
115	120	125
Asp Glu Ala Ser Glu Thr Glu Glu Glu Glu Glu Pro Ser Val Val		
130	135	140
Ile Met Gly Arg		
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<210> 33  
 <211> 253  
 <212> PRT  
 <213> Drosophila melanogaster

<400> 33		
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Asp Lys Pro Leu Arg Pro Phe Ile Lys Thr Ala Thr Asp Leu Gln Arg		
35	40	45

Leu Lys Leu Glu Lys Leu Met Lys Asn Pro Asp Lys Pro Val Val Ile  
 50 55 60  
 Pro Glu Gln Arg Arg Glu Arg Asp Phe Met Ser Ser Val Pro Thr Phe  
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 Val Arg Asn Val Met Gly Ser Ser Ala Gly Ala Gly Ser Gly Glu Phe  
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 His Val Tyr Arg His Leu Arg Arg Lys Glu Tyr Ala Arg Gln Lys Asn  
 100 105 110  
 Ile Gln Asn Gln Ser Ala Arg Glu Ala Ala Asp Glu Ala Tyr Gln Gln  
 115 120 125  
 Lys Leu Asp Asp Asn Arg Arg Ala Ala Glu Glu Lys Thr Ala Lys Lys  
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 Arg Ala Lys Arg Leu Lys Arg Lys Gln Arg Ala Lys Lys Pro Arg Glu  
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 Ser Glu Glu Glu Pro Thr Glu Glu Lys Ala Glu Ser Ser Pro Glu Glu  
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<210> 34

<211> 2456

<212> DNA

<213> Homo sapiens

<400> 34

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<210> 35  
 <211> 366  
 <212> PRT  
 <213> Homo sapiens

<400> 35  
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 Asn Val Val Leu Asp Gln Thr Tyr Leu Trp Gln Gly Val Arg Val Ala  
 35 40 45  
 Ala Gly Ala Gln Ile His Gln Ser Leu Leu Cys Asp Asn Ala Glu Val  
 50 55 60  
 Lys Glu Arg Val Thr Leu Lys Pro Arg Ser Val Leu Thr Ser Gln Val  
 65 70 75 80  
 Val Val Gly Pro Asn Ile Thr Leu Pro Glu Gly Ser Val Ile Ser Leu  
 85 90 95

His Pro Pro Asp Ala Glu Glu Asp Glu Asp Asp Gly Glu Phe Ser Asp  
 100 105 110  
 Asp Ser Gly Ala Asp Gln Glu Lys Asp Lys Val Lys Met Lys Gly Tyr  
 115 120 125  
 Asn Pro Ala Glu Val Gly Ala Ala Gly Lys Gly Tyr Leu Trp Lys Ala  
 130 135 140  
 Ala Gly Met Asn Met Glu Glu Glu Glu Leu Gln Gln Asn Leu Trp  
 145 150 155 160  
 Gly Leu Lys Ile Asn Met Glu Glu Glu Ser Glu Ser Glu Ser Glu Gln  
 165 170 175  
 Ser Met Asp Ser Glu Glu Pro Asp Ser Arg Gly Gly Ser Pro Gln Met  
 180 185 190  
 Asp Asp Ile Lys Val Phe Gln Asn Glu Val Leu Gly Thr Leu Gln Arg  
 195 200 205  
 Gly Lys Glu Glu Asn Ile Ser Cys Asp Asn Leu Val Leu Glu Ile Asn  
 210 215 220  
 Ser Leu Lys Tyr Ala Tyr Asn Ile Ser Leu Lys Glu Val Met Gln Val  
 225 230 235 240  
 Leu Ser His Val Val Leu Glu Phe Pro Leu Gln Gln Met Asp Ser Pro  
 245 250 255  
 Leu Asp Ser Ser Arg Tyr Cys Ala Leu Leu Leu Pro Leu Leu Lys Ala  
 260 265 270  
 Trp Ser Pro Val Phe Arg Asn Tyr Ile Lys Arg Ala Ala Asp His Leu  
 275 280 285  
 Glu Ala Leu Ala Ala Ile Glu Asp Phe Phe Leu Glu His Glu Ala Leu  
 290 295 300  
 Gly Ile Ser Met Ala Lys Val Leu Met Ala Phe Tyr Gln Leu Glu Ile  
 305 310 315 320  
 Leu Ala Glu Glu Thr Ile Leu Ser Trp Phe Ser Gln Arg Asp Thr Thr  
 325 330 335  
 Asp Lys Gly Gln Gln Leu Arg Lys Asn Gln Gln Leu Gln Arg Phe Ile  
 340 345 350  
 Gln Trp Leu Lys Glu Ala Glu Glu Glu Ser Ser Glu Asp Asp  
 355 360 365

<210> 36  
 <211> 2456  
 <212> DNA  
 <213> Homo sapiens

<400> 36

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tatacaagca gcagaaagag ccaactgctc tctgctgttc cctgagggaa agccggagca 240
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acattgagag atgtagggag gcaccacttt gacttcagta aatgttcttt gatttgagca 2400
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<210> 37

<211> 641

<212> PRT

<213> Homo sapiens

<400> 37

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                20                      25                     30

Arg Pro Thr Ser Leu Asn Val Val Arg Ile Ile Thr Ser Glu Leu Tyr

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Arg Ser Leu Gly Asp Val Leu Arg Asp Val Asp Ala Lys Ala Leu Val		
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Arg Ser Asp Phe Leu Leu Val Tyr Gly Asp Val Ile Ser Asn Ile Asn		
65	70	75
Ile Thr Arg Ala Leu Glu Glu His Arg Leu Arg Arg Lys Leu Glu Lys		
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Asn Val Ser Val Met Thr Met Ile Phe Lys Glu Ser Ser Pro Ser His		
	100	105
Pro Thr Arg Cys His Glu Asp Asn Val Val Val Ala Val Asp Ser Thr		
	115	120
Thr Asn Arg Val Leu His Phe Gln Lys Thr Gln Gly Leu Arg Arg Phe		
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Ala Phe Pro Leu Ser Leu Phe Gln Gly Ser Ser Asp Gly Val Glu Val		
	145	150
Arg Tyr Asp Leu Leu Asp Cys His Ile Ser Ile Cys Ser Pro Gln Val		
	155	160
Ala Gln Leu Phe Thr Asp Asn Phe Asp Tyr Gln Thr Arg Asp Asp Phe		
	165	170
Val Arg Gly Leu Leu Val Asn Glu Glu Ile Leu Gly Asn Gln Ile His		
	175	180
Met His Val Thr Ala Lys Glu Tyr Gly Ala Arg Val Ser Asn Leu His		
	185	190
Met Tyr Ser Ala Val Cys Ala Asp Val Ile Arg Arg Trp Val Tyr Pro		
	195	200
Leu Thr Pro Glu Ala Asn Phe Thr Asp Ser Thr Thr Gln Ser Cys Thr		
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His Ser Arg His Asn Ile Tyr Arg Gly Pro Glu Val Ser Leu Gly His		
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Gly Ser Ile Leu Glu Glu Asn Val Leu Leu Gly Ser Gly Thr Val Ile		
	225	230
Gly Ser Asn Cys Phe Ile Thr Asn Ser Val Ile Gly Pro Gly Cys His		
	235	240
Ile Gly Asp Asn Val Val Leu Asp Gln Thr Tyr Leu Trp Gln Gly Val		
	245	250
Arg Val Ala Ala Gly Ala Gln Ile His Gln Ser Leu Leu Cys Asp Asn		
	255	260
Ala Glu Val Lys Glu Arg Val Thr Leu Lys Pro Arg Ser Val Leu Thr		
	265	270
	275	280
	285	290
	295	300
	305	310
	315	320
	325	330
	335	

340	345	350
Ser Gln Val Val Val Gly Pro Asn Ile Thr Leu Pro Glu Gly Ser Val		
355	360	365
Ile Ser Leu His Pro Pro Asp Ala Glu Glu Asp Glu Asp Asp Gly Glu		
370	375	380
Phe Ser Asp Asp Ser Gly Ala Asp Gln Glu Lys Asp Lys Val Lys Met		
385	390	400
Lys Gly Tyr Asn Pro Ala Glu Val Gly Ala Ala Gly Lys Gly Tyr Leu		
405	410	415
Trp Lys Ala Ala Gly Met Asn Met Glu Glu Glu Glu Glu Leu Gln Gln		
420	425	430
Asn Leu Trp Gly Leu Lys Ile Asn Met Glu Glu Glu Ser Glu Ser Glu		
435	440	445
Ser Glu Gln Ser Met Asp Ser Glu Glu Pro Asp Ser Arg Gly Gly Ser		
450	455	460
Pro Gln Met Asp Asp Ile Lys Val Phe Gln Asn Glu Val Leu Gly Thr		
465	470	475
Leu Gln Arg Gly Lys Glu Glu Asn Ile Ser Cys Asp Asn Leu Val Leu		
485	490	495
Glu Ile Asn Ser Leu Lys Tyr Ala Tyr Asn Val Ser Leu Lys Glu Val		
500	505	510
Met Gln Val Leu Ser His Val Val Leu Glu Phe Pro Leu Gln Gln Met		
515	520	525
Asp Ser Pro Leu Asp Ser Ser Arg Tyr Cys Ala Leu Leu Leu Pro Leu		
530	535	540
Leu Lys Ala Trp Ser Pro Val Phe Arg Asn Tyr Ile Lys Arg Ala Ala		
545	550	555
Asp His Leu Glu Ala Leu Ala Ala Ile Glu Asp Phe Phe Leu Glu His		
565	570	575
Glu Ala Leu Gly Ile Ser Met Ala Lys Val Leu Met Ala Phe Tyr Gln		
580	585	590
Leu Glu Ile Leu Ala Glu Glu Thr Ile Leu Ser Trp Phe Ser Gln Arg		
595	600	605
Asp Thr Thr Asp Lys Gly Gln Gln Leu Arg Lys Asn Gln Gln Leu Gln		
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Arg Phe Ile Gln Trp Leu Lys Glu Ala Glu Glu Glu Ser Ser Glu Asp		
625	630	635
640		
Asp		



<210> 38  
 <211> 721  
 <212> PRT  
 <213> Oryctolagus cuniculus

<400> 38  
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 20 25 30  
 Arg Gly Ala Glu Glu Glu Ser Pro Pro Pro Leu Gln Ala Val Leu Val  
 35 40 45  
 Ala Asp Ser Phe Asn Arg Arg Phe Phe Pro Ile Ser Lys Asp Gln Pro  
 50 55 60  
 Arg Val Leu Leu Pro Leu Ala Asn Val Ala Leu Ile Asp Tyr Thr Leu  
 65 70 75 80  
 Glu Phe Leu Thr Ala Thr Gly Val Gln Glu Thr Phe Val Phe Cys Cys  
 85 90 95  
 Trp Lys Ala Ala Gln Ile Lys Glu His Leu Gln Lys Ser Lys Trp Cys  
 100 105 110  
 Arg Pro Thr Ser Leu Asn Val Val Arg Ile Ile Thr Ser Glu Leu Tyr  
 115 120 125  
 Arg Ser Leu Gly Asp Val Leu Arg Asp Val Asp Ala Lys Ala Leu Val  
 130 135 140  
 Arg Ser Asp Phe Leu Leu Val Tyr Gly Asp Val Val Ser Asn Ile Asn  
 145 150 155 160  
 Val Thr Arg Ala Leu Glu Glu His Arg Leu Arg Arg Lys Leu Glu Lys  
 165 170 175  
 Asn Val Ser Val Met Thr Met Ile Phe Lys Glu Ser Ser Pro Ser His  
 180 185 190  
 Pro Thr Arg Cys His Glu Asp Asn Val Val Val Ala Val Asp Ser Ala  
 195 200 205  
 Thr Asn Arg Ile Leu His Phe Gln Lys Thr Gln Gly Leu Arg Arg Phe  
 210 215 220  
 Ser Phe Pro Leu Ser Leu Phe Gln Gly Ser Gly Ala Gly Val Glu Ile  
 225 230 235 240  
 Arg Tyr Asp Leu Leu Asp Cys His Ile Ser Ile Cys Ser Pro Gln Val  
 245 250 255

Ala Gln Leu Phe Thr Asp Asn Phe Asp Tyr Gln Thr Arg Asp Asp Phe  
 260 265 270  
 Val Arg Gly Leu Leu Val Asn Glu Glu Ile Leu Gly Asn Gln Ile His  
 275 280 285  
 Met His Val Thr Thr Arg Glu Tyr Gly Ala Arg Val Ser Asn Leu His  
 290 295 300  
 Met Tyr Ser Ala Val Cys Ala Asp Val Ile Arg Arg Trp Val Tyr Pro  
 305 310 315 320  
 Leu Thr Pro Glu Ala Asn Phe Thr Asp Ser Thr Ala Gln Ser Cys Thr  
 325 330 335  
 His Ser Arg His Asn Ile Tyr Arg Gly Pro Glu Val Ser Leu Gly His  
 340 345 350  
 Gly Ser Ile Leu Glu Glu Asn Val Leu Leu Gly Ser Gly Thr Val Ile  
 355 360 365  
 Gly Ser Asn Cys Ser Ile Thr Asn Ser Val Ile Gly Pro Gly Cys Cys  
 370 375 380  
 Ile Gly Asp Asn Val Val Leu Asp Arg Ala Tyr Leu Trp Lys Gly Val  
 385 390 395 400  
 Gln Val Ala Ser Gly Ala Gln Ile His Gln Ser Leu Leu Cys Asp His  
 405 410 415  
 Ala Glu Val Lys Glu Gln Val Thr Leu Lys Pro His Cys Val Leu Thr  
 420 425 430  
 Ser Gln Val Val Val Gly Pro Asn Ile Thr Leu Pro Glu Gly Ser Val  
 435 440 445  
 Ile Ser Leu His Pro Pro Asp Ala Glu Glu Asp Glu Asp Asp Gly Gln  
 450 455 460  
 Phe Ser Asp Asp Ser Gly Val Asn Gln Ala Lys Glu Lys Ala Lys Leu  
 465 470 475 480  
 Lys Gly Tyr Asn Pro Ala Glu Val Gly Val Ala Gly Lys Gly Tyr Leu  
 485 490 495  
 Trp Lys Ala Ala Asp Met Asn Thr Glu Lys Glu Glu Glu Leu Arg Gln  
 500 505 510  
 Ser Leu Trp Gly Leu Thr Ile Asn Glu Glu Glu Glu Ser Glu Thr Glu  
 515 520 525  
 Ser Glu Arg Ser Met Asp Ser Glu Glu Leu Asp Ser Arg Ala Gly Ser  
 530 535 540  
 Pro Gln Leu Asp Asp Ile Lys Val Phe Gln Asn Glu Val Leu Gly Thr  
 545 550 555 560

Leu Gln Arg Gly Lys Glu Glu Ser Ile Ser Cys Asp Asn Leu Ile Leu  
 565 570 575  
 Glu Ile Asn Ser Leu Lys Tyr Ala Tyr Asn Ile Ser Leu Lys Glu Val  
 580 585 590  
 Met Gln Val Leu Ser His Val Val Leu Glu Phe Pro Leu Gln Gln Met  
 595 600 605  
 Asp Ser Pro Leu Glu Ala Asn Arg Tyr Cys Ala Leu Leu Leu Pro Leu  
 610 615 620  
 Leu Lys Ala Trp Ser Pro Val Phe Arg Asn Tyr Ile Lys Arg Ala Ala  
 625 630 635 640  
 Asp His Leu Glu Ala Leu Ala Ala Ile Glu Glu Phe Phe Leu Glu His  
 645 650 655  
 Glu Ala Leu Gly Thr Cys Ile Ala Lys Val Leu Met Gly Phe Tyr Gln  
 660 665 670  
 Leu Glu Ile Leu Ala Glu Glu Thr Ile Leu Ser Trp Phe Gly Gln Arg  
 675 680 685  
 Asp Val Thr Asp Lys Gly Arg Gln Leu Arg Lys Asn Gln Gln Leu Gln  
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 Arg Phe Ile Gln Trp Leu Lys Glu Ala Glu Glu Glu Ser Ser Glu Asp  
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Asp

<210> 39

<211> 716

<212> PRT

<213> Rattus norvegicus

<400> 39

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 Glu Pro Pro Pro Pro Leu Gln Ala Val Leu Val Ala Asp Ser Phe Asp  
 35 40 45  
 Arg Arg Phe Phe Pro Ile Ser Lys Asp Gln Pro Arg Val Leu Leu Pro  
 50 55 60  
 Leu Ala Asn Val Ala Leu Ile Asp Tyr Thr Leu Glu Phe Leu Thr Ala  
 65 70 75 80  
 Thr Gly Val Gln Glu Thr Phe Val Phe Cys Cys Trp Lys Ala Ala Gln  
 85 90 95

Ile Lys Glu His Leu Gln Lys Ser Lys Trp Cys His Pro Thr Ser Leu  
 100 105 110  
 Asn Val Val Arg Ile Thr Thr Ser Asp Leu Tyr Arg Ser Leu Gly Asp  
 115 120 125  
 Val Leu Arg Asp Val Asp Ala Lys Ala Leu Val Arg Ser Asp Phe Leu  
 130 135 140  
 Leu Ile Tyr Gly Asp Val Val Ser Asn Ile Asn Ile Ser Lys Ala Leu  
 145 150 155 160  
 Glu Glu His Arg Leu Arg Arg Lys Leu Glu Lys Asn Val Ser Val Met  
 165 170 175  
 Thr Met Val Phe Lys Glu Ser Ser Pro Ser His Pro Thr Arg Cys His  
 180 185 190  
 Glu Asp Asn Val Val Leu Ala Val Asp Ser Thr Thr Asn Arg Ile Leu  
 195 200 205  
 His Phe Gln Lys Thr Gln Gly Leu Arg His Phe Ser Phe Pro Leu Gly  
 210 215 220  
 Leu Phe Gln Gly Ser Leu Asp Gly Val Glu Ile Arg Tyr Asp Leu Leu  
 225 230 235 240  
 Asp Cys His Ile Ser Ile Cys Ser Pro Gln Val Ala Gln Leu Phe Thr  
 245 250 255  
 Asp Asn Phe Asp Tyr Gln Thr Arg Asp Asp Phe Val Arg Gly Leu Leu  
 260 265 270  
 Val Asn Glu Glu Ile Leu Gly Asn Gln Ile His Leu His Val Thr Ser  
 275 280 285  
 Arg Glu Tyr Gly Ser Arg Val Ser Asn Leu His Met Tyr Ser Ala Val  
 290 295 300  
 Cys Thr Asp Val Ile Arg Arg Trp Val Tyr Pro Leu Thr Pro Glu Val  
 305 310 315 320  
 Asn Phe Thr Asp Ser Ser Thr Gln Ser Tyr Thr His Ser Arg His Asn  
 325 330 335  
 Ile Tyr Arg Gly Pro Glu Val Ser Leu Gly His Gly Ser Val Leu Glu  
 340 345 350  
 Glu Asn Val Leu Leu Gly Ala Gly Thr Val Val Gly Ser Asn Cys Ser  
 355 360 365  
 Ile Thr Asn Ser Val Ile Gly Pro Asn Cys His Ile Gly Asp Asn Val  
 370 375 380  
 Val Leu Asp Gln Ala Tyr Leu Trp Gln Gly Val Arg Val Ala Ala Gly  
 385 390 395 400

Ala Gln Ile His Gln Ser Leu Leu Cys Asp Arg Ala Glu Val Lys Glu  
 405 410 415  
 Arg Val Ile Leu Lys Pro His Cys Val Leu Thr Ser Gln Val Val Val  
 420 425 430  
 Gly Pro Asp Ile Ile Leu Pro Glu Gly Ser Val Ile Ser Leu His Pro  
 435 440 445  
 Pro Asp Ala Glu Glu Asp Glu Asp Asp Gly Gln Phe Ser Asp Asp Ser  
 450 455 460  
 Gly Ala Asp Gln Glu Lys Glu Lys Val Lys Leu Lys Gly Tyr Asn Pro  
 465 470 475 480  
 Ala Glu Val Gly Pro Glu Gly Gln Gly Tyr Leu Trp Lys Ala Glu Asp  
 485 490 495  
 Val Asp Glu Lys Glu Asp Glu Glu Leu Arg Gln Ser Leu Trp Gly Leu  
 500 505 510  
 Met Ile Asn Met Glu Glu Glu Ser Glu Thr Glu Ser Glu Arg Ser Val  
 515 520 525  
 Asp Pro Glu Glu Leu Asp Ser Arg Ala Gly Ser Pro Gln Leu Asp Asp  
 530 535 540  
 Ile Arg Val Phe Gln Asn Glu Val Leu Gly Thr Leu Gln Arg Gly Arg  
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 Glu Glu Asn Ile Ser Cys Asp Asn Leu Val Leu Glu Ile Asn Ser Leu  
 565 570 575  
 Lys Tyr Ala Tyr Asn Ile Ser Leu Lys Glu Val Met Gln Val Leu Ser  
 580 585 590  
 His Val Val Leu Glu Phe Pro Leu Gln Gln Val Asp Gly Val Leu Asp  
 595 600 605  
 Pro Asn Arg Tyr Cys Ala Leu Leu Leu Pro Leu Leu Lys Ala Trp Ser  
 610 615 620  
 Pro Val Phe Arg Asn Tyr Ile Lys Arg Ala Ala Asp His Leu Glu Ala  
 625 630 635 640  
 Leu Ala Ala Ile Glu Asp Phe Phe Leu Glu His Glu Thr Leu Val Pro  
 645 650 655  
 Ser Leu Ala Lys Val Leu Met Ala Phe Tyr Gln Leu Glu Ile Leu Ala  
 660 665 670  
 Glu Glu Thr Ile Leu Ser Trp Phe Ser Gln Arg Asp Ile Thr Asp Lys  
 675 680 685  
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Leu Arg Glu Ala Glu Glu Glu Ser Ser Asp Asp Asp  
 705 710 715

<210> 40  
 <211> 730  
 <212> PRT  
 <213> Arabidopsis thaliana

<400> 40  
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 35 40 45  
 Leu Leu Pro Ile Val Asn Val Pro Met Ile Asp Tyr Thr Leu Ala Trp  
 50 55 60  
 Leu Glu Ser Ala Gly Ile Glu Glu Val Phe Val Phe Cys Cys Ala His  
 65 70 75 80  
 Ser Met Gln Val Ile Glu Tyr Leu Glu Lys Ser Glu Trp Tyr Ser His  
 85 90 95  
 Pro Asn Leu Leu Val Arg Thr Ile Glu Ser His Lys Ser Ile Ser Ala  
 100 105 110  
 Gly Asp Ala Leu Arg Tyr Met Tyr Glu Gln Gln Thr Glu Thr Ser Gln  
 115 120 125  
 Ile Gln Gly Asp Phe Val Leu Val Ser Gly Asp Thr Val Ser Asn Met  
 130 135 140  
 Pro Leu Ala Asp Leu Ile Gln Glu His Arg Glu Arg Lys Lys Lys Asp  
 145 150 155 160  
 Glu Lys Ala Ile Met Thr Met Val Ile Lys Gln Ser Lys Ser Ser Pro  
 165 170 175  
 Leu Thr His Gln Ser Arg Leu Gly Thr Asp Gln Leu Phe Ile Ala Val  
 180 185 190  
 Asp Pro Leu Thr Lys Gln Leu Leu His Tyr Glu Glu Asp Lys Ile Asp  
 195 200 205  
 His Pro Ser Gly Ser Val Cys Leu Glu Lys Ser Leu Leu Asp Thr Asn  
 210 215 220  
 Pro Ser Val Leu Val Cys Asn Asp Met Gln Asp Cys Tyr Ile Asp Ile  
 225 230 235 240  
 Cys Ser Pro Glu Val Leu Ser Leu Phe Glu Asp Asn Phe Asp Tyr Gln

245					250					255					
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			260					265					270		
Gly	Tyr	Lys	Ile	Phe	Thr	His	Glu	Ile	His	Ser	Ser	Tyr	Ala	Gly	Arg
		275					280					285			
Ile	Asp	Asn	Phe	Arg	Ser	Tyr	Asp	Thr	Val	Ser	Lys	Asp	Ile	Ile	Gln
	290					295					300				
Arg	Trp	Thr	Tyr	Pro	Tyr	Val	Pro	Asp	Ile	Asn	Phe	Ser	Gly	Asn	Arg
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Pro	Leu	Lys	Leu	Gly	Arg	Gln	Gly	Ile	Tyr	Lys	Ala	Ser	Asp	Val	Val
				325					330					335	
Gln	Ser	Arg	Ser	Ala	Asp	Val	Gly	Ala	Ser	Thr	Val	Ile	Gly	Tyr	Gly
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Thr	Lys	Ile	Gly	His	Gly	Asp	Lys	Ile	Met	Asn	Ser	Val	Ile	Gly	Asn
	355						360					365			
Gly	Cys	Ser	Ile	Gly	Ser	Asn	Val	Val	Ile	Glu	Gly	Ser	Tyr	Ile	Trp
	370					375					380				
Asn	Asn	Val	Thr	Ile	Glu	Asp	Gly	Cys	Glu	Ile	Arg	Asn	Ala	Ile	Val
385					390					395					400
Cys	Asp	Gly	Val	Lys	Ile	Arg	Ala	Gly	Ala	Val	Leu	Gln	Pro	Gly	Val
				405					410					415	
Val	Leu	Ser	Phe	Asn	Val	Val	Val	Gly	Arg	Asp	Phe	Val	Val	Pro	Ala
			420					425					430		
Tyr	Ser	Lys	Val	Ser	Leu	Leu	Gln	Gln	Pro	Thr	Thr	Glu	Asp	Ser	Asp
		435					440					445			
Glu	Glu	Leu	Glu	Tyr	Ala	Asp	Ser	Ser	Ser	Gly	Thr	Ala	Asp	His	Leu
	450					455					460				
Ser	Gly	Leu	Asn	Leu	Gln	Met	Glu	Ser	Lys	Ala	Ser	Glu	Leu	Gly	Pro
465					470					475					480
Asp	Gly	Ala	Gly	Tyr	Ile	Trp	Glu	Val	Cys	Glu	Gly	Ala	His	Asp	Glu
				485					490					495	
Glu	Trp	Lys	His	Ser	Val	Ala	Pro	Ile	Pro	Lys	Asp	Lys	Leu	Ser	Glu
			500					505					510		
Ile	Thr	Gln	Ala	Ile	Asp	Asp	Asp	Asp	Thr	Asp	Asp	Glu	Ser	Val	Val
		515					520					525			
Pro	Thr	Ser	Gly	Glu	Leu	Lys	Ser	Asp	Ala	Asp	Ser	Ile	Asn	Thr	Asp
	530					535					540				
Val	Asn	Asp	Pro	Asn	Asp	Asp	Tyr	Tyr	Tyr	Phe	Glu	Lys	Glu	Val	Glu

545                      550                      555                      560  
 Gly Thr Val Leu Arg Ala Val Glu Glu Asn Ile Lys Val Asp Leu Val  
                                  565                                   570                                   575  
 Thr Met Glu Ile Asn Gly Leu Arg Leu Ser Phe Asn Met Glu Ser Ala  
                                  580                                   585                                   590  
 Asp Cys Ala Gly Ala Thr Phe Phe Ser Met Ile Lys Leu Ala Leu Asp  
                                  595                                   600                                   605  
 Thr Pro His Asn Ser Gly Ser Glu Leu Tyr Lys Asn Ala Ala Ser Ile  
                                  610                                   615                                   620  
 Ile Thr Lys Trp Lys Asp Leu Leu Gly Phe Tyr Ala Lys Lys Ile Asp  
                                  625                                   630                                   635                                   640  
 Glu Gln Ile Glu Val Ile Met Lys Phe Glu Glu Met Cys Gln Glu Ser  
                                  645                                   650                                   655  
 His Lys Glu Leu Gly Pro Leu Phe Thr Gln Ile Leu His Leu Leu Tyr  
                                  660                                   665                                   670  
 Asp Lys Asp Val Leu Gln Glu Asp Ala Ile Leu Arg Trp Glu Glu Glu  
                                  675                                   680                                   685  
 Lys Ala Gly Ala Asp Glu Ala Asp Lys Val Tyr Leu Lys Gln Cys Asp  
                                  690                                   695                                   700  
 Thr Phe Ile Gln Trp Leu Lys Glu Ala Ser Glu Glu Glu Asp Glu Asp  
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 Asp Glu Asp Glu Glu Glu Glu Glu Asp Asn  
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<210> 41  
 <211> 676  
 <212> PRT  
 <213> Arabidopsis thaliana

<400> 41  
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 Glu Glu Gln Ser Arg Arg Gln Arg Leu Gln Ala Ile Leu Leu Ala Asp  
                                   20                                  25                                  30  
 Ser Phe Ala Thr Lys Leu Leu Pro Leu Thr Leu Glu Arg Pro Asn Val  
                                   35                                  40                                  45  
 Leu Leu Pro Leu Val Asn Ile Pro Met Ile Asp Tyr Thr Leu Ala Trp  
                                   50                                  55                                  60  
 Leu Glu Ser Ala Gly Ile Glu Glu Val Phe Val Phe Cys Ser Met Gln  
                                   65                                  70                                  75                                  80



Val	Ile	Asp	Tyr	Leu	Asn	Asn	Ser	Asp	Trp	Tyr	Ser	His	Lys	Asp	Phe	85	90	95
Thr	Val	Lys	Thr	Ile	Glu	Ser	Pro	Gln	Asn	Ser	Thr	Ser	Ala	Gly	Asp	100	105	110
Ala	Leu	Arg	Tyr	Ile	Tyr	Glu	Gln	Gln	Ile	Glu	Thr	Ser	Gln	Ile	Gln	115	120	125
Gly	Asp	Phe	Val	Leu	Val	Asn	Gly	Cys	Ile	Val	Ser	Asn	Met	Pro	Leu	130	135	140
Thr	Gln	Leu	Ile	Gln	Glu	His	Arg	Asp	Arg	Lys	Lys	Lys	Asp	Glu	Lys	145	150	155
Ala	Ile	Met	Thr	Met	Val	Ile	Arg	Gln	Ser	Leu	Ile	Thr	Asp	His	Gln	165	170	175
Leu	Phe	Ile	Ala	Val	Asn	Pro	Leu	Thr	Lys	Gln	Leu	Leu	Tyr	Tyr	Asp	180	185	190
Glu	Asp	Asn	Ile	Cys	Phe	Asp	Lys	Ser	Leu	Leu	Asp	Arg	Asn	Pro	Ser	195	200	205
Val	Leu	Leu	Cys	Ser	Asp	Met	Gln	Asp	Cys	Tyr	Ile	Asp	Ile	Cys	Ser	210	215	220
Leu	Glu	Val	Leu	Ser	Leu	Phe	Val	Asp	Asn	Phe	Asp	Tyr	Gln	His	Met	225	230	235
Arg	Cys	Asp	Phe	Val	Glu	Gly	Val	Leu	Ala	Asp	Asp	Ile	Ile	Gly	Tyr	245	250	255
Lys	Ile	Phe	Thr	His	Glu	Ile	Ser	Ser	Cys	Tyr	Ala	Ser	Arg	Ile	Glu	260	265	270
Asn	Phe	Arg	Ser	Tyr	Asp	Met	Val	Ser	Lys	Asp	Ile	Ile	Gln	Arg	Arg	275	280	285
Thr	Phe	Pro	Tyr	Val	Pro	Asp	Met	Lys	Phe	Ser	Gly	Asn	Arg	Thr	Leu	290	295	300
Lys	Leu	Glu	Arg	Gln	Gly	Ile	Tyr	Lys	Ala	Ser	Asp	Ala	Thr	Gln	Leu	305	310	315
Pro	Ser	Ala	His	Val	Gly	Ala	Ser	Tyr	Val	Ile	Gly	His	Ala	Thr	Asn	325	330	335
Ile	Gly	Ser	Gly	Thr	Lys	Ile	Leu	Asn	Ser	Val	Ile	Gly	Asn	Gly	Cys	340	345	350
Ser	Ile	Gly	Ser	Asn	Val	Val	Ile	Gln	Gly	Ser	Tyr	Ile	Trp	Asn	Asn	355	360	365
Val	Thr	Val	Glu	Asp	Gly	Cys	Glu	Ile	Arg	Asn	Ala	Ile	Val	Cys	Asp	370	375	380

Glu Val Lys Val Cys Ala Gly Ala Ile Val Lys Pro Gly Val Val Leu  
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 His Ser Val Pro Pro Ile Pro Lys Asp Lys Leu Ala Glu Ile Ile Lys  
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 <212> DNA  
 <213> Homo sapiens

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<210> 43  
 <211> 76  
 <212> PRT  
 <213> Homo sapiens

<400> 43  
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 Gln Ile Ile Gly Arg Ile Asp Asp Met Ser Ser Arg Ile Asp Asp Leu  
 35 40 45

Glu Lys Asn Ile Ala Asp Leu Met Thr Gln Ala Gly Val Glu Glu Leu  
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Glu Ser Glu Asn Lys Ile Pro Ala Thr Gln Lys Ser  
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<210> 44  
 <211> 2004  
 <212> DNA  
 <213> Homo sapiens

<400> 44  
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<210> 45  
 <211> 76  
 <212> PRT  
 <213> Homo sapiens

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Gln Ile Ile Gly Arg Ile Asp Asp Met Ser Ser Arg Ile Asp Asp Leu	35	40	45
Glu Lys Asn Ile Ala Asp Leu Met Thr Gln Ala Gly Val Glu Glu Leu	50	55	60
Glu Ser Glu Asn Lys Ile Pro Ala Thr Gln Lys Ser	65	70	75

<210> 46  
 <211> 76  
 <212> PRT  
 <213> Mus musculus

<400> 46
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Gln Ile Ile Gly Arg Ile Asp Asp Met Ser Ser Arg Ile Asp Asp Leu
35 40 45
Glu Lys Asn Ile Ala Asp Leu Met Thr Gln Ala Gly Val Glu Glu Leu
50 55 60
Asp Pro Glu Asn Lys Ile Pro Thr Ala Gln Lys Ser
65 70 75

<210> 47  
 <211> 86  
 <212> PRT  
 <213> Drosophila melanogaster

<400> 47
Met Thr Asp Leu Arg Asn Glu Met Asp Ser Asp Leu Asp Gln Asn Tyr
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Ser Leu Asn Ser Asn Ala Asp Pro Lys Asn Met Gln Glu Leu Thr Ile
20 25 30
Tyr Val Gln Asn Leu Leu Gln Asn Val Gln Asp Lys Phe Gln Thr Met
35 40 45
Ser Asp Gln Ile Ile Thr Arg Ile Asp Asp Met Gly Asn Arg Ile Asp
50 55 60
Asp Leu Glu Lys Ser Ile Ala Asp Leu Met Asn Gln Ala Gly Ile Glu
65 70 75 80

Gly Gln Gly Pro Glu Lys  
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<210> 48

<211> 80

<212> PRT

<213> *Caenorhabditis elegans*

<400> 48

Met Ser Asp Glu Lys Ser Thr Thr Pro Thr Ala Gln Leu Asp Ala Pro  
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Ala Asp Gly Asn Met Asn Asp Leu Thr Ser Leu Ile Gln Gly Val Leu  
20 25 30

Gln Gln Thr Gln Asp Arg Phe Gln His Met Ser Asp Gln Ile Ile Arg  
35 40 45

Arg Ile Asp Asp Met Thr Thr Arg Ile Asp Asp Leu Glu Lys Asn Ile  
50 55 60

Asn Asp Leu Leu Gln Ser Asn Gln Val Glu His Pro Pro Ser Ala Gln  
65 70 75 80

<210> 49

<211> 99

<212> PRT

<213> *Oryza sativa*

<400> 49

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Gln Asp Ser Asp Gly Ser Ala Gln Ser Thr Ala Asp Met Thr Ala Phe  
20 25 30

Val Gln Asn Leu Leu Met Gln Met Gln Thr Arg Phe Gln Ser Met Ser  
35 40 45

Glu Asn Ile Ile Ser Lys Ile Asp Glu Met Gly Ala Arg Ile Asp Glu  
50 55 60

Leu Glu Gln Ser Ile Asn Asp Leu Lys Val Glu Met Gly Thr Glu Gly  
65 70 75 80

Ile Thr Pro Thr Lys Pro Lys Asp Glu Glu Ser Lys Pro Ala Gly Ser  
85 90 95

Ser Ala Glu

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 <211> 4204  
 <212> DNA  
 <213> Homo sapiens

<400> 50

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<210> 51  
 <211> 90  
 <212> PRT  
 <213> Homo sapiens

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<400> 51
Met Leu Gly Glu Ile Glu His Tyr Val Phe Leu Leu Leu Lys Phe
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Pro Glu Ala Phe Thr Lys Ile Lys His Gln Trp Glu Ala Lys Ser Phe
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Met Lys Leu Ala Ile Asp Ile Asp Pro Val Ile Met Leu Leu Phe Phe
          35             40             45

Leu Leu Leu Leu Ser Val Cys Ile Ser Ser Ser Leu Gly Trp Met Ser
          50             55             60

Ile Gly Gln His Gly Lys Thr Met Phe Ile Asp Leu Gln Phe Leu Gly
          65             70             75             80

Ala Leu Lys Lys Val Met His Arg Tyr Ile
          85             90

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<210> 52  
 <211> 3111  
 <212> DNA  
 <213> Homo sapiens

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cacctccgca tcccagccca taggttggtt ctacgcgcag tgtctgatta ttttgcgca 180

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gataccattg	aaagtttgct	ggctgcagct	tgtcttctgc	agctgactca	ggtcattgat	360
gtttgtctca	attttctcat	aaagcagctc	catccttcaa	actgcttagg	gattcgatca	420
tttgagatg	cccaaggctg	tacagaactt	ctgaacgtgg	cacacaaata	cactatggaa	480
cacttcattg	aggtaataaa	aaaccaagaa	ttcctcctgc	ttccagctaa	tgaaatttca	540
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<210> 53

<211> 569

<212> PRT

<213> Homo sapiens

<400> 53

Met	Asn	Ala	Thr	Arg	Ser	Glu	Glu	Gln	Phe	His	Val	Ile	Asn	His	Ala	1	5	10	15
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Cys	Asp	Val	Leu	Leu	Ile	Ala	Gly	His	Leu	Arg	Ile	Pro	Ala	His	Arg	35	40	45	
Leu	Val	Leu	Ser	Ala	Val	Ser	Asp	Tyr	Phe	Ala	Ala	Met	Phe	Thr	Asn	50	55	60	
Asp	Val	Leu	Glu	Ala	Lys	Gln	Glu	Glu	Val	Arg	Met	Glu	Gly	Val	Asp	65	70	75	80
Pro	Asn	Ala	Leu	Asn	Ser	Leu	Val	Gln	Tyr	Ala	Tyr	Thr	Gly	Val	Leu	85	90	95	
Gln	Leu	Lys	Glu	Asp	Thr	Ile	Glu	Ser	Leu	Leu	Ala	Ala	Ala	Cys	Leu	100	105	110	
Leu	Gln	Leu	Thr	Gln	Val	Ile	Asp	Val	Cys	Ser	Asn	Phe	Leu	Ile	Lys	115	120	125	
Gln	Leu	His	Pro	Ser	Asn	Cys	Leu	Gly	Ile	Arg	Ser	Phe	Gly	Asp	Ala	130	135	140	
Gln	Gly	Cys	Thr	Glu	Leu	Leu	Asn	Val	Ala	His	Lys	Tyr	Thr	Met	Glu	145	150	155	160
His	Phe	Ile	Glu	Val	Ile	Lys	Asn	Gln	Glu	Phe	Leu	Leu	Leu	Pro	Ala	165	170	175	
Asn	Glu	Ile	Ser	Lys	Leu	Leu	Cys	Ser	Asp	Asp	Ile	Asn	Val	Pro	Asp	180	185	190	
Glu	Glu	Thr	Ile	Phe	His	Ala	Leu	Met	Gln	Trp	Val	Gly	His	Asp	Val	195	200	205	
Gln	Asn	Arg	Gln	Gly	Glu	Leu	Gly	Met	Leu	Leu	Ser	Tyr	Ile	Arg	Leu	210	215	220	
Pro	Leu	Leu	Pro	Pro	Gln	Leu	Leu	Ala	Asp	Leu	Glu	Thr	Ser	Ser	Met	225	230	235	240
Phe	Thr	Gly	Asp	Leu	Glu	Cys	Gln	Lys	Leu	Leu	Met	Glu	Ala	Met	Lys	245	250	255	
Tyr	His	Leu	Leu	Pro	Glu	Arg	Arg	Ser	Met	Met	Gln	Ser	Pro	Arg	Thr	260	265	270	
Lys	Pro	Arg	Lys	Ser	Thr	Val	Gly	Ala	Leu	Tyr	Ala	Val	Gly	Gly	Met	275	280	285	
Asp	Ala	Met	Lys	Gly	Thr	Thr	Thr	Ile	Glu	Lys	Tyr	Asp	Leu	Arg	Thr	290	295	300	

Asn Ser Trp Leu His Ile Gly Thr Met Asn Gly Arg Arg Leu Gln Phe  
 305 310 315 320  
 Gly Val Ala Val Ile Asp Asn Lys Leu Tyr Val Val Gly Gly Arg Asp  
 325 330 335  
 Gly Leu Lys Thr Leu Asn Thr Val Glu Cys Phe Asn Pro Val Gly Lys  
 340 345 350  
 Ile Trp Thr Val Met Pro Pro Met Ser Thr His Arg His Gly Leu Gly  
 355 360 365  
 Val Ala Thr Leu Glu Gly Pro Met Tyr Ala Val Gly Gly His Asp Gly  
 370 375 380  
 Trp Ser Tyr Leu Asn Thr Val Glu Arg Trp Asp Pro Glu Gly Arg Gln  
 385 390 395 400  
 Trp Asn Tyr Val Ala Ser Met Ser Thr Pro Arg Ser Thr Val Gly Val  
 405 410 415  
 Val Ala Leu Asn Asn Lys Leu Tyr Ala Ile Gly Gly Arg Asp Gly Ser  
 420 425 430  
 Ser Cys Leu Lys Ser Met Glu Tyr Phe Asp Pro His Thr Asn Lys Trp  
 435 440 445  
 Ser Leu Cys Ala Pro Met Ser Lys Arg Arg Gly Gly Val Gly Val Ala  
 450 455 460  
 Thr Tyr Asn Gly Phe Leu Tyr Val Val Gly Gly His Asp Ala Pro Ala  
 465 470 475 480  
 Ser Asn His Cys Ser Arg Leu Ser Asp Cys Val Glu Arg Tyr Asp Pro  
 485 490 495  
 Lys Gly Asp Ser Trp Ser Thr Val Ala Pro Leu Ser Val Pro Arg Asp  
 500 505 510  
 Ala Val Ala Val Cys Pro Leu Gly Asp Lys Leu Tyr Val Val Gly Gly  
 515 520 525  
 Tyr Asp Gly His Thr Tyr Leu Asn Thr Val Glu Ser Tyr Asp Ala Gln  
 530 535 540  
 Arg Asn Glu Trp Lys Glu Glu Val Pro Val Asn Ile Gly Arg Ala Gly  
 545 550 555 560  
 Ala Cys Val Val Val Val Lys Leu Pro  
 565

<210> 54  
 <211> 3111  
 <212> DNA  
 <213> Homo sapiens

<400> 54

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tctaaagttg	tgcattttact	tgaaaagtta	ctttcacaaa	gggtttttca	atatttcac	240
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ccatttttgt	tatttttaaaa	cttaacaagt	cttttttttt	ttttatatag	cacacatatac	360
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<210> 55

<211> 728

<212> PRT

<213> Homo sapiens

<400> 55

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Lys Glu Phe Asp Val Lys Gln Ile Leu Arg Leu Arg Trp Arg Trp Phe  
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Ser His Pro Phe Gln Gly Ser Thr Asn Thr Gly Ser Cys Leu Gln Gln  
35 40 45

Glu Gly Tyr Glu His Arg Gly Thr Pro Val Gln Gly Arg Leu Lys Ser  
50 55 60

His Ser Arg Asp Arg Asn Gly Leu Lys Lys Ser Asn Ser Pro Val His  
65 70 75 80

His Asn Ile Leu Ala Pro Val Pro Gly Pro Ala Pro Ala His Gln Arg  
85 90 95

Ala Val Gln Asn Leu Gln Gln His Asn Leu Ile Val His Phe Gln Ala  
100 105 110

Asn Glu Asp Thr Pro Lys Ser Val Pro Glu Lys Asn Leu Phe Lys Glu  
115 120 125

Ala Cys Glu Lys Arg Ala Gln Asp Leu Glu Met Met Ala Asp Asp Asn  
130 135 140

Ile Glu Asp Ser Thr Ala Arg Leu Asp Thr Gln His Ser Glu Asp Met  
145 150 155 160

Asn Ala Thr Arg Ser Glu Glu Gln Phe His Val Ile Asn His Ala Glu  
165 170 175

Gln Thr Leu Arg Lys Met Glu Asn Tyr Leu Lys Glu Lys Gln Leu Cys  
180 185 190

Asp Val Leu Leu Ile Ala Gly His Leu Arg Ile Pro Ala His Arg Leu  
195 200 205

Val Leu Ser Ala Val Ser Asp Tyr Phe Ala Ala Met Phe Thr Asn Asp  
210 215 220

Val Leu Glu Ala Lys Gln Glu Glu Val Arg Met Glu Gly Val Asp Pro  
225 230 235 240

Asn Ala Leu Asn Ser Leu Val Gln Tyr Ala Tyr Thr Gly Val Leu Gln  
245 250 255

Leu Lys Glu Asp Thr Ile Glu Ser Leu Leu Ala Ala Ala Cys Leu Leu  
260 265 270

Gln Leu Thr Gln Val Ile Asp Val Cys Ser Asn Phe Leu Ile Lys Gln  
275 280 285

Leu His Pro Ser Asn Cys Leu Gly Ile Arg Ser Phe Gly Asp Ala Gln  
 290 295 300  
 Gly Cys Thr Glu Leu Leu Asn Val Ala His Lys Tyr Thr Met Glu His  
 305 310 315 320  
 Phe Ile Glu Val Ile Lys Asn Gln Glu Phe Leu Leu Leu Pro Ala Asn  
 325 330 335  
 Glu Ile Ser Lys Leu Leu Cys Ser Asp Asp Ile Asn Val Pro Asp Glu  
 340 345 350  
 Glu Thr Ile Phe His Ala Leu Met Gln Trp Val Gly His Asp Val Gln  
 355 360 365  
 Asn Arg Gln Gly Glu Leu Gly Met Leu Leu Ser Tyr Ile Arg Leu Pro  
 370 375 380  
 Leu Leu Pro Pro Gln Leu Leu Ala Asp Leu Glu Thr Ser Ser Met Phe  
 385 390 395 400  
 Thr Gly Asp Leu Glu Cys Gln Lys Leu Leu Met Glu Ala Met Lys Tyr  
 405 410 415  
 His Leu Leu Pro Glu Arg Arg Ser Met Met Gln Ser Pro Arg Thr Lys  
 420 425 430  
 Pro Arg Lys Ser Thr Val Gly Ala Leu Tyr Ala Val Gly Gly Met Asp  
 435 440 445  
 Ala Met Lys Gly Thr Thr Thr Ile Glu Lys Tyr Asp Leu Arg Thr Asn  
 450 455 460  
 Ser Trp Leu His Ile Gly Thr Met Asn Gly Arg Arg Leu Gln Phe Gly  
 465 470 475 480  
 Val Ala Val Ile Asp Asn Lys Leu Tyr Val Val Gly Gly Arg Asp Gly  
 485 490 495  
 Leu Lys Thr Leu Asn Thr Val Glu Cys Phe Asn Pro Val Gly Lys Ile  
 500 505 510  
 Trp Thr Val Met Pro Pro Met Ser Thr His Arg His Gly Leu Gly Val  
 515 520 525  
 Ala Thr Leu Glu Gly Pro Met Tyr Ala Val Gly Gly His Asp Gly Trp  
 530 535 540  
 Ser Tyr Leu Asn Thr Val Glu Arg Trp Asp Pro Glu Gly Arg Gln Trp  
 545 550 555 560  
 Asn Tyr Val Ala Ser Met Ser Thr Pro Arg Ser Thr Val Gly Val Val  
 565 570 575  
 Ala Leu Asn Asn Lys Leu Tyr Ala Ile Gly Gly Arg Asp Gly Ser Ser  
 580 585 590

Cys Leu Lys Ser Met Glu Tyr Phe Asp Pro His Thr Asn Lys Trp Ser  
 595 600 605  
 Leu Cys Ala Pro Met Ser Lys Arg Arg Gly Gly Val Gly Val Ala Thr  
 610 615 620  
 Tyr Asn Gly Phe Leu Tyr Val Val Gly Gly His Asp Ala Pro Ala Ser  
 625 630 635 640  
 Asn His Cys Ser Arg Leu Ser Asp Cys Val Glu Arg Tyr Asp Pro Lys  
 645 650 655  
 Gly Asp Ser Trp Ser Thr Val Ala Pro Leu Ser Val Pro Arg Asp Ala  
 660 665 670  
 Val Ala Val Cys Pro Leu Gly Asp Lys Leu Tyr Val Val Gly Gly Tyr  
 675 680 685  
 Asp Gly His Thr Tyr Leu Asn Thr Val Glu Ser Tyr Asp Ala Gln Arg  
 690 695 700  
 Asn Glu Trp Lys Glu Glu Val Pro Val Asn Ile Gly Arg Ala Gly Ala  
 705 710 715 720  
 Cys Val Val Val Val Lys Leu Pro  
 725

<210> 56  
 <211> 569  
 <212> PRT  
 <213> Homo sapiens

<400> 56  
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 Glu Gln Thr Leu Arg Lys Met Glu Asn Tyr Leu Lys Glu Lys Gln Leu  
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 Cys Asp Val Leu Leu Ile Ala Gly His Leu Arg Ile Pro Ala His Arg  
 35 40 45  
 Leu Val Leu Ser Ala Val Ser Asp Tyr Phe Ala Ala Met Phe Thr Asn  
 50 55 60  
 Asp Val Leu Glu Ala Lys Gln Glu Glu Val Arg Met Glu Gly Val Asp  
 65 70 75 80  
 Pro Asn Ala Leu Asn Ser Leu Val Gln Tyr Ala Tyr Thr Gly Val Leu  
 85 90 95  
 Gln Leu Lys Glu Asp Thr Ile Glu Ser Leu Leu Ala Ala Ala Cys Leu  
 100 105 110  
 Leu Gln Leu Thr Gln Val Ile Asp Val Cys Ser Asn Phe Leu Ile Lys

115					120					125					
Gln	Leu	His	Pro	Ser	Asn	Cys	Leu	Gly	Ile	Arg	Ser	Phe	Gly	Asp	Ala
130					135					140					
Gln	Gly	Cys	Thr	Glu	Leu	Leu	Asn	Val	Ala	His	Lys	Tyr	Thr	Met	Glu
145					150					155					160
His	Phe	Ile	Glu	Val	Ile	Lys	Asn	Gln	Glu	Phe	Leu	Leu	Leu	Pro	Ala
			165						170					175	
Asn	Glu	Ile	Ser	Lys	Leu	Leu	Cys	Ser	Asp	Asp	Ile	Asn	Val	Pro	Asp
			180					185					190		
Glu	Glu	Thr	Ile	Phe	His	Ala	Leu	Met	Gln	Trp	Val	Gly	His	Asp	Val
		195					200					205			
Gln	Asn	Arg	Gln	Gly	Glu	Leu	Gly	Met	Leu	Leu	Ser	Tyr	Ile	Arg	Leu
210					215					220					
Pro	Leu	Leu	Pro	Pro	Gln	Leu	Leu	Ala	Asp	Leu	Glu	Thr	Ser	Ser	Met
225					230					235					240
Phe	Thr	Gly	Asp	Leu	Glu	Cys	Gln	Lys	Leu	Leu	Met	Glu	Ala	Met	Lys
			245						250					255	
Tyr	His	Leu	Leu	Pro	Glu	Arg	Arg	Ser	Met	Met	Gln	Ser	Pro	Arg	Thr
		260						265					270		
Lys	Pro	Arg	Lys	Ser	Thr	Val	Gly	Ala	Leu	Tyr	Ala	Val	Gly	Gly	Met
	275						280					285			
Asp	Ala	Met	Lys	Gly	Thr	Thr	Thr	Ile	Glu	Lys	Tyr	Asp	Leu	Arg	Thr
290					295					300					
Asn	Ser	Trp	Leu	His	Ile	Gly	Thr	Met	Asn	Gly	Arg	Arg	Leu	Gln	Phe
305					310					315					320
Gly	Val	Ala	Val	Ile	Asp	Asn	Lys	Leu	Tyr	Val	Val	Gly	Gly	Arg	Asp
			325						330					335	
Gly	Leu	Lys	Thr	Leu	Asn	Thr	Val	Glu	Cys	Phe	Asn	Pro	Val	Gly	Lys
			340					345					350		
Ile	Trp	Thr	Val	Met	Pro	Pro	Met	Ser	Thr	His	Arg	His	Gly	Leu	Gly
		355					360					365			
Val	Ala	Thr	Leu	Glu	Gly	Pro	Met	Tyr	Ala	Val	Gly	Gly	His	Asp	Gly
370					375					380					
Trp	Ser	Tyr	Leu	Asn	Thr	Val	Glu	Arg	Trp	Asp	Pro	Glu	Gly	Arg	Gln
385					390					395					400
Trp	Asn	Tyr	Val	Ala	Ser	Met	Ser	Thr	Pro	Arg	Ser	Thr	Val	Gly	Val
			405						410					415	
Val	Ala	Leu	Asn	Asn	Lys	Leu	Tyr	Ala	Ile	Gly	Gly	Arg	Asp	Gly	Ser



420	425	430
Ser Cys Leu Lys Ser Met Glu Tyr Phe Asp Pro His Thr Asn Lys Trp		
435	440	445
Ser Leu Cys Ala Pro Met Ser Lys Arg Arg Gly Gly Val Gly Val Ala		
450	455	460
Thr Tyr Asn Gly Phe Leu Tyr Val Val Gly Gly His Asp Ala Pro Ala		
465	470	475
Ser Asn His Cys Ser Arg Leu Ser Asp Cys Val Glu Arg Tyr Asp Pro		
485	490	495
Lys Gly Asp Ser Trp Ser Thr Val Ala Pro Leu Ser Val Pro Arg Asp		
500	505	510
Ala Val Ala Val Cys Pro Leu Gly Asp Lys Leu Tyr Val Val Gly Gly		
515	520	525
Tyr Asp Gly His Thr Tyr Leu Asn Thr Val Glu Ser Tyr Asp Ala Gln		
530	535	540
Arg Asn Glu Trp Lys Glu Glu Val Pro Val Asn Ile Gly Arg Ala Gly		
545	550	555
Ala Cys Val Val Val Val Lys Leu Pro		
565		

<210> 57  
 <211> 748  
 <212> PRT  
 <213> Homo sapiens

<400> 57  
 Met Ser Gly Ser Gly Arg Lys Asp Phe Asp Val Lys His Ile Leu Arg  
 1 5 10 15  
 Leu Arg Trp Lys Leu Phe Ser His Pro Ser Pro Ser Thr Gly Gly Pro  
 20 25 30  
 Ala Gly Gly Gly Cys Leu Gln Gln Asp Gly Ser Gly Ser Phe Glu His  
 35 40 45  
 Trp Gly Pro Ser Gln Ser Arg Leu Leu Lys Ser Gln Glu Arg Ser Gly  
 50 55 60  
 Val Ser Thr Phe Trp Lys Lys Pro Ser Ser Ser Ser Ser Ser Ser  
 65 70 75 80  
 Ser Pro Ser Ser Ser Ser Ser Ser Phe Asn Pro Leu Asn Gly Thr Leu  
 85 90 95  
 Leu Pro Val Ala Thr Arg Leu Gln Gln Gly Ala Pro Gly Gln Gly Thr  
 100 105 110

Gln Gln Pro Ala Arg Thr Leu Phe Tyr Val Glu Ser Leu Glu Glu Glu  
 115 120 125  
 Val Val Pro Gly Met Asp Phe Pro Gly Pro His Glu Lys Gly Leu Val  
 130 135 140  
 Leu Gln Glu Leu Lys Val Glu Pro Asp Asn Ser Ser Gln Ala Thr Gly  
 145 150 155 160  
 Glu Gly Cys Gly His Arg Leu Ser Ser Thr Gly His Ser Met Thr Pro  
 165 170 175  
 Gln Ser Asp Leu Asp Ser Ser Ser Ser Glu Glu Phe Tyr Gln Ala Val  
 180 185 190  
 His His Ala Glu Gln Thr Phe Arg Lys Met Glu Ser Tyr Leu Lys Gln  
 195 200 205  
 Gln Gln Leu Cys Asp Val Ile Leu Ile Val Gly Asn Arg Lys Ile Pro  
 210 215 220  
 Ala His Arg Leu Val Leu Ser Ser Val Ser Asp Tyr Phe Ala Ala Met  
 225 230 235 240  
 Phe Thr Ser Asp Val Cys Glu Ala Lys Gln Glu Glu Ile Lys Met Glu  
 245 250 255  
 Gly Ile Asp Pro Asn Ala Leu Trp Asp Leu Val Gln Phe Ala Tyr Thr  
 260 265 270  
 Gly Cys Leu Glu Leu Lys Glu Asp Thr Ile Glu Asn Leu Leu Ala Ala  
 275 280 285  
 Ala Cys Leu Leu Gln Leu Pro Gln Val Val Glu Val Cys Cys His Phe  
 290 295 300  
 Leu Met Lys Leu Leu His Pro Ser Asn Cys Leu Gly Ile Arg Ala Phe  
 305 310 315 320  
 Ala Asp Ala Gln Gly Cys Ile Glu Leu Met Lys Val Ala His Ser Tyr  
 325 330 335  
 Thr Met Glu Asn Ile Met Glu Val Ile Arg Asn Gln Glu Phe Leu Leu  
 340 345 350  
 Leu Pro Ala Glu Glu Leu His Lys Leu Leu Ala Ser Asp Asp Val Asn  
 355 360 365  
 Val Pro Asp Glu Glu Thr Ile Phe His Ala Leu Met Met Trp Val Lys  
 370 375 380  
 Tyr Asp Met Gln Ser Arg Cys Asn Asp Leu Ser Met Leu Leu Ala Phe  
 385 390 395 400  
 Ile Arg Leu Pro Leu Leu Pro Pro Gln Ile Leu Ala Asp Leu Glu Asn  
 405 410 415

His Ala Leu Phe Lys Asn Asp Leu Glu Cys Gln Lys Leu Ile Leu Glu  
 420 425 430  
 Ala Met Lys Tyr His Leu Leu Pro Glu Arg Arg Thr Leu Met Gln Ser  
 435 440 445  
 Pro Arg Thr Lys Pro Arg Lys Ser Thr Val Gly Thr Leu Tyr Ala Val  
 450 455 460  
 Gly Gly Met Asp Asn Asn Lys Gly Ala Thr Thr Ile Glu Lys Tyr Asp  
 465 470 475 480  
 Leu Arg Thr Asn Leu Trp Ile Gln Ala Gly Met Met Asn Gly Arg Arg  
 485 490 495  
 Leu Gln Phe Gly Val Ala Val Ile Asp Asp Lys Leu Phe Val Ile Gly  
 500 505 510  
 Gly Arg Asp Gly Leu Lys Thr Leu Asn Thr Val Glu Cys Tyr Asn Pro  
 515 520 525  
 Lys Thr Lys Thr Trp Thr Val Leu Pro Pro Met Ser Thr His Arg His  
 530 535 540  
 Gly Leu Gly Val Thr Val Leu Glu Gly Pro Ile Tyr Ala Val Gly Gly  
 545 550 555 560  
 His Asp Gly Trp Ser Tyr Leu Asn Thr Val Glu Arg Trp Asp Pro Gln  
 565 570 575  
 Ser Gln Gln Trp Thr Phe Val Ala Ser Met Ser Ile Ala Arg Ser Thr  
 580 585 590  
 Val Gly Val Ala Ala Leu Asn Gly Lys Leu Tyr Ser Val Gly Gly Arg  
 595 600 605  
 Asp Gly Ser Ser Cys Leu Ser Ser Met Glu Tyr Tyr Asp Pro His Thr  
 610 615 620  
 Asn Lys Trp Asn Met Cys Ala Pro Met Cys Lys Arg Arg Gly Gly Val  
 625 630 635 640  
 Gly Val Ala Thr Cys Asp Gly Phe Leu Tyr Ala Val Gly Gly His Asp  
 645 650 655  
 Ala Pro Ala Ser Asn His Cys Ser Arg Leu Leu Asp Tyr Val Glu Arg  
 660 665 670  
 Tyr Asp Pro Lys Thr Asp Thr Trp Thr Met Val Ala Pro Leu Ser Met  
 675 680 685  
 Pro Arg Asp Ala Val Gly Val Cys Leu Leu Gly Asp Arg Leu Tyr Ala  
 690 695 700  
 Val Gly Gly Tyr Asp Gly Gln Thr Tyr Leu Asn Thr Met Glu Ser Tyr  
 705 710 715 720

Asp Pro Gln Thr Asn Glu Trp Thr Gln Met Ala Ser Leu Asn Ile Gly  
725 730 735

Arg Ala Gly Ala Cys Val Val Val Ile Lys Gln Pro  
740 745

<210> 58

<211> 751

<212> PRT

<213> Mus musculus

<400> 58

Met Ser Gly Ser Gly Arg Lys Asp Phe Asp Val Lys His Ile Leu Arg  
1 5 10 15

Leu Arg Trp Lys Leu Phe Ser His Pro Ser Pro Ala Ser Ser Ser Pro  
20 25 30

Ala Gly Gly Ser Cys Leu Gln Gln Asp Ser Gly Gly Gly Ser Phe Glu  
35 40 45

His Trp Gly Pro Ser Gln Ser Arg Leu Leu Lys Asn Gln Glu Lys Gly  
50 55 60

Ser Val Ser Ala Phe Trp Lys Lys Pro Ser Ser Ser Ser Ser Ser  
65 70 75 80

Ser Ser Ser Ser Ser Ser Ala Ser Ser Ser Pro Phe Asn Pro Leu Asn  
85 90 95

Gly Thr Leu Leu Pro Val Ala Thr Arg Leu Gln Gln Gly Ala Pro Gly  
100 105 110

Gln Gly Thr Gln Gln Pro Ala Arg Thr Leu Phe Tyr Val Glu Ser Leu  
115 120 125

Glu Glu Glu Val Val Thr Gly Met Asp Phe Pro Gly Pro Gln Asp Lys  
130 135 140

Gly Leu Ala Leu Lys Glu Leu Gln Ala Glu Pro Ala Ser Ser Ile Gln  
145 150 155 160

Ala Thr Gly Glu Gly Cys Gly His Arg Leu Thr Ser Thr Asn His Ser  
165 170 175

Leu Thr Pro Gln Ser Asp Leu Asp Ser Ser Ser Ser Glu Glu Phe Tyr  
180 185 190

Gln Ala Val Arg His Ala Glu Gln Ser Phe Arg Lys Met Glu Asn Tyr  
195 200 205

Leu Lys Gln Gln Gln Leu Cys Asp Val Ile Leu Ile Val Gly Asn Arg  
210 215 220

Lys Ile Pro Ala His Arg Leu Val Leu Ser Ser Val Ser Asp Tyr Phe  
225 230 235 240

Ala	Ala	Met	Phe	Thr	Ser	Asp	Val	Cys	Glu	Ala	Lys	Gln	Glu	Glu	Ile	245	250	255
Lys	Met	Glu	Gly	Ile	Asp	Pro	Asn	Ala	Leu	Trp	Asp	Leu	Val	Gln	Phe	260	265	270
Ala	Tyr	Thr	Gly	Cys	Leu	Glu	Leu	Lys	Glu	Asp	Thr	Ile	Glu	Asn	Leu	275	280	285
Leu	Ala	Ala	Ala	Cys	Leu	Leu	Gln	Leu	Pro	Gln	Val	Val	Glu	Val	Cys	290	295	300
Cys	His	Phe	Leu	Met	Lys	Leu	Leu	His	Pro	Ser	Asn	Cys	Leu	Gly	Ile	305	310	315
Arg	Ala	Phe	Ala	Asp	Ala	Gln	Gly	Cys	Ile	Glu	Leu	Met	Lys	Val	Ala	325	330	335
His	Ser	Tyr	Thr	Met	Glu	Asn	Ile	Met	Glu	Val	Ile	Arg	Asn	Gln	Glu	340	345	350
Phe	Leu	Leu	Leu	Pro	Ala	Glu	Glu	Leu	His	Lys	Leu	Leu	Ala	Ser	Asp	355	360	365
Asp	Val	Asn	Val	Pro	Asp	Glu	Glu	Thr	Ile	Phe	His	Ala	Leu	Met	Met	370	375	380
Trp	Val	Lys	Tyr	Asp	Met	Gln	Arg	Arg	Cys	Ser	Asp	Leu	Ser	Met	Leu	385	390	395
Leu	Ala	Phe	Ile	Arg	Leu	Pro	Leu	Leu	Pro	Pro	Gln	Ile	Leu	Ala	Asp	405	410	415
Leu	Glu	Asn	His	Ala	Leu	Phe	Lys	Asn	Asp	Leu	Glu	Cys	Gln	Lys	Leu	420	425	430
Ile	Leu	Glu	Ala	Met	Lys	Tyr	His	Leu	Leu	Pro	Glu	Arg	Arg	Thr	Leu	435	440	445
Met	Gln	Ser	Pro	Arg	Thr	Lys	Pro	Arg	Lys	Ser	Thr	Val	Gly	Thr	Leu	450	455	460
Tyr	Ala	Val	Gly	Gly	Met	Asp	Asn	Asn	Lys	Gly	Ala	Thr	Thr	Ile	Glu	465	470	475
Lys	Tyr	Asp	Leu	Arg	Thr	Asn	Leu	Trp	Ile	Gln	Ala	Gly	Met	Met	Asn	485	490	495
Gly	Arg	Arg	Leu	Gln	Phe	Gly	Val	Ala	Val	Ile	Asp	Asp	Lys	Leu	Phe	500	505	510
Val	Ile	Gly	Gly	Arg	Asp	Gly	Leu	Lys	Thr	Leu	Asn	Thr	Val	Glu	Cys	515	520	525
Tyr	Asn	Pro	Lys	Thr	Lys	Thr	Trp	Thr	Val	Leu	Pro	Pro	Met	Ser	Thr	530	535	540

His Arg His Gly Leu Gly Val Thr Val Leu Glu Gly Pro Ile Tyr Ala  
 545 550 555 560  
 Val Gly Gly His Asp Gly Trp Ser Tyr Leu Asn Thr Val Glu Arg Trp  
 565 570 575  
 Asp Pro Gln Ser Gln Gln Trp Thr Tyr Val Ala Ser Met Ser Ile Ala  
 580 585 590  
 Arg Ser Thr Val Gly Val Ala Ala Leu Asn Gly Lys Leu Tyr Ser Val  
 595 600 605  
 Gly Gly Arg Asp Gly Ser Ser Cys Leu Ser Ser Met Glu Tyr Tyr Asp  
 610 615 620  
 Pro His Thr Asn Lys Trp Ser Met Cys Pro Pro Met Cys Lys Lys Arg  
 625 630 635 640  
 Gly Gly Val Gly Val Ala Thr Cys Asp Gly Phe Leu Tyr Ala Val Gly  
 645 650 655  
 Gly His Asp Ala Pro Ala Ser Asn His Cys Ser Arg Leu Leu Asp Tyr  
 660 665 670  
 Val Glu Arg Tyr Glu Pro Lys Thr Asp Thr Trp Thr Met Val Ala Pro  
 675 680 685  
 Leu Ser Met Pro Arg Asp Ala Val Gly Val Cys Leu Leu Gly Asp Arg  
 690 695 700  
 Leu Tyr Ala Val Gly Gly Tyr Asp Gly Gln Thr Tyr Leu Asn Thr Met  
 705 710 715 720  
 Glu Ser Tyr Asp Pro Gln Thr Asn Glu Trp Thr Gln Met Ala Ser Leu  
 725 730 735  
 Asn Ile Gly Arg Ala Gly Ala Cys Val Val Val Ile Lys Gln Pro  
 740 745 750

<210> 59

<211> 411

<212> PRT

<213> Homo sapiens

<400> 59

Met Glu His Phe Ile Glu Val Ile Lys Asn Gln Glu Phe Leu Leu Leu  
 1 5 10 15

Pro Ala Asn Glu Ile Ser Lys Leu Leu Cys Ser Asp Asp Ile Asn Val  
 20 25 30

Pro Asp Glu Glu Thr Ile Phe His Ala Leu Met Gln Trp Val Gly His  
 35 40 45

Asp Val Gln Asn Arg Gln Gly Glu Leu Gly Met Leu Leu Ser Tyr Ile

50					55					60					
Arg	Leu	Pro	Leu	Leu	Pro	Pro	Gln	Leu	Leu	Ala	Asp	Leu	Glu	Thr	Ser
65					70					75					80
Ser	Met	Phe	Thr	Gly	Asp	Leu	Glu	Cys	Gln	Lys	Leu	Leu	Met	Glu	Ala
				85					90					95	
Met	Lys	Tyr	His	Leu	Leu	Pro	Glu	Arg	Arg	Ser	Met	Met	Gln	Ser	Pro
			100					105					110		
Arg	Thr	Lys	Pro	Arg	Lys	Ser	Thr	Val	Gly	Ala	Leu	Tyr	Ala	Val	Gly
		115					120						125		
Gly	Met	Asp	Ala	Met	Lys	Gly	Thr	Thr	Thr	Ile	Glu	Lys	Tyr	Asp	Leu
	130					135					140				
Arg	Thr	Asn	Ser	Trp	Leu	His	Ile	Gly	Thr	Met	Asn	Gly	Arg	Arg	Leu
145					150					155					160
Gln	Phe	Gly	Val	Ala	Val	Ile	Asp	Asn	Lys	Leu	Tyr	Val	Val	Gly	Gly
				165					170					175	
Arg	Asp	Gly	Leu	Lys	Thr	Leu	Asn	Thr	Val	Glu	Cys	Phe	Asn	Pro	Val
			180					185					190		
Gly	Lys	Ile	Trp	Thr	Val	Met	Pro	Pro	Met	Ser	Thr	His	Arg	His	Gly
		195					200					205			
Leu	Gly	Val	Ala	Thr	Leu	Glu	Gly	Pro	Met	Tyr	Ala	Val	Gly	Gly	His
	210					215					220				
Asp	Gly	Trp	Ser	Tyr	Leu	Asn	Thr	Val	Glu	Arg	Trp	Asp	Pro	Glu	Gly
225					230					235				240	
Arg	Gln	Trp	Asn	Tyr	Val	Ala	Ser	Met	Ser	Thr	Pro	Arg	Ser	Thr	Val
			245						250					255	
Gly	Val	Val	Ala	Leu	Asn	Asn	Lys	Leu	Tyr	Ala	Ile	Gly	Gly	Arg	Asp
			260					265					270		
Gly	Ser	Ser	Cys	Leu	Lys	Ser	Met	Glu	Tyr	Phe	Asp	Pro	His	Thr	Asn
		275					280					285			
Lys	Trp	Ser	Leu	Cys	Ala	Pro	Met	Ser	Lys	Arg	Arg	Gly	Gly	Val	Gly
	290					295					300				
Val	Ala	Thr	Tyr	Asn	Gly	Phe	Leu	Tyr	Val	Val	Gly	Gly	His	Asp	Ala
305					310					315				320	
Pro	Ala	Ser	Asn	His	Cys	Ser	Arg	Leu	Ser	Asp	Cys	Val	Glu	Arg	Tyr
			325						330				335		
Asp	Pro	Lys	Gly	Asp	Ser	Trp	Ser	Thr	Val	Ala	Pro	Leu	Ser	Val	Pro
			340					345					350		
Arg	Asp	Ala	Val	Ala	Val	Cys	Pro	Leu	Gly	Asp	Lys	Leu	Tyr	Val	Val

355

360

365

Gly Gly Tyr Asp Gly His Thr Tyr Leu Asn Thr Val Glu Ser Tyr Asp  
370 375 380

Ala Gln Arg Asn Glu Trp Lys Glu Glu Val Pro Val Asn Ile Gly Arg  
385 390 395 400

Ala Gly Ala Cys Val Val Val Val Lys Leu Pro  
405 410

&lt;210&gt; 60

&lt;211&gt; 1339

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 60

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cacggtccgc ccagaggctt cggagctgcc ggagccgggc ggggccttgg cgggcggccc 60
cgggagtggc ggcggcggcg tgggtggtcgg cgtggctgag gtgagaaact ggcgctgcgg 120
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tgcttcgctt ccctggccct ggcccgccgc taccttcacc acctcctgct gtgggtggag 240
agccttgact cgctgctggg ggtcctgctc ttctgctggg gcttcacgtt ggtctctttc 300
ccctgcggct ggggctacat cgtgctcaac gtggccgctg gctacctgta cggcttcgtg 360
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gcggttatcc gcgtagtgga gggaggaagc ggcccgaaag tgggtggcgt ggccagactg 540
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aactatctga tggcatcttc ggttggactg cttcctaccc agcttctgaa ttcttacttg 660
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gttttttgtt tacagattat tataagtata ggctcatgt tttatgtagt tcatcgagct 780
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atttacgaac agagaaataa ctcaaatatt atttctgctt agtgctttta tttataaagc 1260
ccatgagtag tttgtatgca tctttcctac ttgtaaagat gagtaaaagt atgcagtttt 1320
aaatttaaaa aaaaaaaaaa

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1339

&lt;210&gt; 61

&lt;211&gt; 186

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 61

Met Gly Leu Met Met Val Gly Val Leu Ile Gly Thr Phe Ile Ala His  
1 5 10 15

Val Val Cys Lys Arg Leu Leu Thr Ala Trp Val Ala Ala Arg Ile Gln  
20 25 30

Ser Ser Glu Lys Leu Ser Ala Val Ile Arg Val Val Glu Gly Gly Ser  
35 40 45



Gly Leu Lys Val Val Ala Leu Ala Arg Leu Thr Pro Ile Pro Phe Gly  
 50 55 60  
 Leu Gln Asn Ala Val Phe Ser Ile Thr Asp Leu Ser Leu Pro Asn Tyr  
 65 70 75 80  
 Leu Met Ala Ser Ser Val Gly Leu Leu Pro Thr Gln Leu Leu Asn Ser  
 85 90 95  
 Tyr Leu Gly Thr Thr Leu Arg Thr Met Glu Asp Val Ile Ala Glu Gln  
 100 105 110  
 Ser Val Ser Gly Tyr Phe Val Phe Cys Leu Gln Ile Ile Ile Ser Ile  
 115 120 125  
 Gly Leu Met Phe Tyr Val Val His Arg Ala Gln Val Glu Leu Asn Ala  
 130 135 140  
 Ala Ile Val Ala Cys Glu Met Glu Leu Lys Ser Ser Leu Val Lys Gly  
 145 150 155 160  
 Asn Gln Pro Asn Thr Ser Gly Ser Ser Phe Tyr Asn Lys Arg Thr Leu  
 165 170 175  
 Thr Phe Ser Gly Gly Gly Ile Asn Val Val  
 180 185

<210> 62  
 <211> 512  
 <212> DNA  
 <213> Homo sapiens

<400> 62  
 gggtcctgct cttcgtcgtg ggcttcacgc tgggtctcttt cccctgcggc tggggctaca 60  
 tcgtgctcaa cgtggccgct ggctacctgt acggcttcgt gctgggcatg ggtctgatga 120  
 tgggtgggct cctcatcggc accttcacgc cccatgtggc ctgcaagcgg ctccctcaccg 180  
 cctgggtggc cgccaggatc cagagcagcg agaagctgag cgcggttatt cgcgtagtgg 240  
 agggaggaag cggcctgaaa gtggtggcgc tggccagact gacacccata ccttttgggc 300  
 ttcagaatgc agtgttttcg attattataa gtataggcct catgttttat gtagttcatc 360  
 gagctcaagt ggaattgaat gcagctattg tagcttgtga aatggaactg aaatcttctc 420  
 tggttaaagg caatcaacca aataccagtg gctcttcatt ctacaacaag aggaccctaa 480  
 cattttctgg aggtggaatc aatgttgtat ga 512

<210> 63  
 <211> 134  
 <212> PRT  
 <213> Homo sapiens

<400> 63  
 Met Gly Leu Met Met Val Gly Val Leu Ile Gly Thr Phe Ile Ala His  
 1 5 10 15  
 Val Val Cys Lys Arg Leu Leu Thr Ala Trp Val Ala Ala Arg Ile Gln  
 20 25 30

Ser Ser Glu Lys Leu Ser Ala Val Ile Arg Val Val Glu Gly Gly Ser  
35 40 45

Gly Leu Lys Val Val Ala Leu Ala Arg Leu Thr Pro Ile Pro Phe Gly  
50 55 60

Leu Gln Asn Ala Val Phe Ser Ile Ile Ile Ser Ile Gly Leu Met Phe  
65 70 75 80

Tyr Val Val His Arg Ala Gln Val Glu Leu Asn Ala Ala Ile Val Ala  
85 90 95

Cys Glu Met Glu Leu Lys Ser Ser Leu Val Lys Gly Asn Gln Pro Asn  
100 105 110

Thr Ser Gly Ser Ser Phe Tyr Asn Lys Arg Thr Leu Thr Phe Ser Gly  
115 120 125

Gly Gly Ile Asn Val Val  
130

<210> 64  
<211> 690  
<212> DNA  
<213> Homo sapiens

<400> 64  
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gctggctacc tgtaaggctt cgtgctgggc atgggtctga tgatgggtggg cgtcctcatc 120  
ggcaccttca tcgcccattg ggtctgcaag cggctcctca ccgctgggt ggccgccagg 180  
atccagagca gcgagaagct gagcgcgggt attcgcgtag tggagggagg aagcggcctg 240  
aaagtgggtg cgctggccag actgacaccc ataccttttg ggcttcagaa tgcgggtgtt 300  
tcgattactg atctctcatt acccaactat ctgatggcat cttegggttg actgcttcct 360  
accagcttc tgaattctta cttgggtacc accctgcgga caatggaaga tgtcattgca 420  
gaacagagtg ttagtggata tttgttttt tgtttacaga ttattataag tataggcctc 480  
atgttttatg tagttcatcg agctcaagtg gaattgaatg cagctattgt agcttgtgaa 540  
atggaactga aatcttctct ggttaaaggc aatcaaccaa ataccagtgg ctcttcattc 600  
tacaacaaga ggaccctaac attttctgga ggtggaatca atgttgatg attctaata 660  
gatacgtgat tgtaagagc ctagtgtgta 690

<210> 65  
<211> 216  
<212> PRT  
<213> Homo sapiens

<400> 65  
Met Gly Phe Ile Val Val Ser Phe Pro Cys Gly Trp Gly Tyr Ile Val  
1 5 10 15

Leu Asn Val Ala Ala Gly Tyr Leu Tyr Gly Phe Val Leu Gly Met Gly  
20 25 30

Leu Met Met Val Gly Val Leu Ile Gly Thr Phe Ile Ala His Val Val  
35 40 45

Cys Lys Arg Leu Leu Thr Ala Trp Val Ala Ala Arg Ile Gln Ser Ser  
 50 55 60  
 Glu Lys Leu Ser Ala Val Ile Arg Val Val Glu Gly Gly Ser Gly Leu  
 65 70 75 80  
 Lys Val Val Ala Leu Ala Arg Leu Thr Pro Ile Pro Phe Gly Leu Gln  
 85 90 95  
 Asn Ala Val Phe Ser Ile Thr Asp Leu Ser Leu Pro Asn Tyr Leu Met  
 100 105 110  
 Ala Ser Ser Val Gly Leu Leu Pro Thr Gln Leu Leu Asn Ser Tyr Leu  
 115 120 125  
 Gly Thr Thr Leu Arg Thr Met Glu Asp Val Ile Ala Glu Gln Ser Val  
 130 135 140  
 Ser Gly Tyr Phe Val Phe Cys Leu Gln Ile Ile Ile Ser Ile Gly Leu  
 145 150 155 160  
 Met Phe Tyr Val Val His Arg Ala Gln Val Glu Leu Asn Ala Ala Ile  
 165 170 175  
 Val Ala Cys Glu Met Glu Leu Lys Ser Ser Leu Val Lys Gly Asn Gln  
 180 185 190  
 Pro Asn Thr Ser Gly Ser Ser Phe Tyr Asn Lys Arg Thr Leu Thr Phe  
 195 200 205  
 Ser Gly Gly Gly Ile Asn Val Val  
 210 215

<210> 66  
 <211> 209  
 <212> PRT  
 <213> Synechococcus sp.

<400> 66  
 Met Ala Asp Tyr Leu Leu Asn Ala Leu Gln Trp Ile Asp Gly Leu Gly  
 1 5 10 15  
 Thr Trp Ala Ala Ile Ala Phe Met Leu Leu Tyr Thr Val Ala Thr Val  
 20 25 30  
 Val Phe Leu Pro Gly Ser Ile Leu Thr Leu Gly Ala Gly Val Val Phe  
 35 40 45  
 Gly Val Ile Leu Gly Ser Ile Tyr Val Phe Ile Gly Ala Thr Leu Gly  
 50 55 60  
 Ala Thr Ala Ala Phe Leu Val Gly Arg Tyr Leu Ala Arg Gly Trp Val  
 65 70 75 80  
 Ala Lys Lys Ile Ala Gly Asn Gln Lys Phe Lys Ala Ile Asp Glu Ala

85	90	95
Val Gly Lys Glu Gly Leu Lys Ile	Val Ile Leu Thr Arg	Leu Ser Pro
100	105	110
Val Phe Pro Phe Asn Leu Leu Asn Tyr Ala Tyr Gly Ile Thr Asn Val		
115	120	125
Ser Leu Lys Asp Tyr Val Ile Gly Ser Leu Gly Met Ile Pro Gly Thr		
130	135	140
Ile Met Tyr Val Tyr Ile Gly Ser Leu Ala Gly Ser Leu Ala Thr Leu		
145	150	155
Gly Thr Ala Thr Asn Gln Ala Asn Pro Thr Leu Gln Trp Thr Ile Arg		
165	170	175
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Glu		

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 <212> PRT  
 <213> *Drosophila melanogaster*

<400> 67

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Val Thr Val Ile Leu Gly Ala Asn Ile Gly Ile Ala Val Ala His Ala			
100	105	110	
Thr Ile Arg Ser Cys Arg His Arg Ile Pro Val Gln Ser Pro Tyr Ile			
115	120	125	

Thr	His	Cys	Ser	Val	Cys	Phe	Leu	Tyr	Ser	Pro	Met	Leu	Arg	Phe	Leu	130	135	140	
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Val	Val	Ala	Pro	Pro	Asp	Arg	Ser	Asp	Val	Leu	Leu	Val	Leu	Pro	Thr	165	170	175	
Val	Trp	Pro	Ser	Glu	Leu	Thr	Lys	Arg	Ile	Arg	Pro	Leu	Ser	Val	Pro	180	185	190	
Asp	Leu	Ile	Glu	Lys	Phe	Ser	Cys	Asp	Ala	Pro	Gly	Gly	Gln	Phe	Ala	195	200	205	
Thr	Met	Ser	Glu	Tyr	Leu	Arg	Ser	Asp	Pro	Arg	Pro	Asp	Gly	Val	Leu	210	215	220	
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Cys	Leu	Arg	Pro	Gly	Ala	Ala	Leu	Val	Leu	Thr	Arg	Ser	Arg	Lys	Arg	290	295	300	
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Ser	Thr	Ile	Phe	Ser	His	Met	His	Tyr	Val	Asp	Asp	Val	Leu	Pro	Leu	325	330	335	
Ala	Met	Leu	Lys	Lys	Ser	Leu	Leu	Trp	Leu	Leu	Arg	Asp	His	Ser	Pro	340	345	350	
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Gln	Glu	Val	Ala	Asn	Glu	Ala	Lys	Ile	Pro	Met	Gly	Asn	Pro	Arg	Tyr	370	375	380	
Ile	Leu	Gln	Tyr	Thr	Arg	Thr	Val	Lys	Thr	Ser	Arg	Glu	Leu	Arg	Ala	385	390	395	400
Leu	Arg	Arg	Ala	Asn	Ala	Thr	Ala	Ala	Asp	Ser	Met	Ala	Glu	Val	Ile	405	410	415	
Ala	Gln	His	His	Gln	Ile	Pro	Gln	Glu	Leu	Ala	Ala	Ser	Phe	Asp	Tyr	420	425	430	

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 <212> PRT  
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<400> 70

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<213> Homo sapiens

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<210> 73

<211> 104

<212> PRT

<213> Homo sapiens

<400> 73

Met Phe Thr Ile Val Ser Ser Ser Ser Phe Val Pro Ser Leu Lys His  
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Phe Leu Phe Pro Pro Gly Ala Ser Lys Leu Gln Leu Ser Leu Gln Ser  
20 25 30

Asp Arg Arg Lys Leu Ala Phe Ile Lys His Gln Leu Cys Ala Trp Lys  
35 40 45

Ile His Leu Gln Tyr His Asn Leu Tyr Asn Asn Ser Ala Ile Trp Ile  
50 55 60

Ser Leu Ser Ala Phe Phe Phe Cys Leu Phe Gly Trp Leu Val Leu Val  
65 70 75 80

Val Leu Val Ser Gly Ser His Ser Val Ala Gln Ala Gly Ala Trp Trp  
85 90 95

His Asp His Asn Ser Leu Gln Pro  
100

<210> 74  
<211> 1183  
<212> DNA  
<213> Homo sapiens

<400> 74  
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catggggcag ctgatccatc cctgggtgtac aaactgctga ctgcagacag atgctgagct 180  
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<210> 75  
<211> 261  
<212> PRT  
<213> Homo sapiens

<400> 75  
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Ser Ser Ser Val Gln Gly Gln Gly Pro Val Thr Met Glu Ala Glu Arg  
20 25 30  
Ser Lys Ala Thr Ala Val Ala Leu Gly Ser Phe Pro Ala Gly Gly Pro  
35 40 45  
Ala Glu Leu Ser Leu Arg Leu Gly Glu Pro Leu Thr Ile Val Ser Glu  
50 55 60  
Asp Gly Asp Trp Trp Thr Val Leu Ser Glu Val Ser Gly Arg Glu Tyr  
65 70 75 80  
Asn Ile Pro Ser Val His Val Gly Lys Val Ser His Gly Trp Leu Tyr  
85 90 95

Glu Gly Leu Ser Arg Glu Lys Ala Glu Glu Leu Leu Leu Leu Pro Gly  
 100 105 110  
 Asn Pro Gly Gly Ala Phe Leu Ile Arg Glu Ser Gln Thr Arg Arg Gly  
 115 120 125  
 Ser Tyr Ser Leu Ser Val Arg Leu Ser Arg Pro Ala Ser Trp Asp Arg  
 130 135 140  
 Ile Arg His Tyr Arg Ile His Cys Leu Asp Asn Gly Trp Leu Tyr Ile  
 145 150 155 160  
 Ser Pro Arg Leu Thr Phe Pro Ser Leu Gln Ala Leu Val Asp His Tyr  
 165 170 175  
 Ser Glu Leu Ala Asp Asp Ile Cys Cys Leu Leu Lys Glu Pro Cys Val  
 180 185 190  
 Leu Gln Arg Ala Gly Pro Leu Pro Gly Lys Asp Ile Pro Leu Pro Val  
 195 200 205  
 Thr Val Gln Arg Thr Pro Leu Asn Trp Lys Glu Leu Asp Ser Ser Leu  
 210 215 220  
 Leu Phe Ser Glu Ala Ala Thr Gly Glu Glu Ser Leu Leu Ser Glu Gly  
 225 230 235 240  
 Leu Arg Glu Ser Leu Ser Phe Tyr Ile Ser Leu Asn Asp Glu Ala Val  
 245 250 255  
 Ser Leu Asp Asp Ala  
 260

<210> 76  
 <211> 1183  
 <212> DNA  
 <213> Homo sapiens

<400> 76  
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 gctgtccagc tctttccagt tgagtgggtg cctctgcaca gtcacaggta ggggtatatac 180  
 cttgccaggg agcggggccag ccctctgcag gacacagggc tccttgagta ggcagcagat 240  
 gtcacccgcc agctcagagt aatgggtccac cagggcctgg agtgagggga aggtgaggcg 300  
 cggtgagatg tacagccagc cattgtcaag gcagtggatc ctgtagtgtc tgatccggtc 360  
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 ctcccggatg aggaaggccc ctccagggtt cccaggtaac aacagcagtt cctctgcttt 480  
 ctccctgctc aggcctcat acagccaccc atgggagact ttgcccacgt ggacgctggg 540  
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<210> 77  
 <211> 261  
 <212> PRT  
 <213> Homo sapiens

<400> 77  
 Met Gly Ser Leu Pro Ser Arg Arg Lys Ser Leu Pro Ser Pro Ser Leu  
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 20 25 30  
 Ser Lys Ala Thr Ala Val Ala Leu Gly Ser Phe Pro Ala Gly Gly Pro  
 35 40 45  
 Ala Glu Leu Ser Leu Arg Leu Gly Glu Pro Leu Thr Ile Val Ser Glu  
 50 55 60  
 Asp Gly Asp Trp Trp Thr Val Leu Ser Glu Val Ser Gly Arg Glu Tyr  
 65 70 75 80  
 Asn Ile Pro Ser Val His Val Ala Lys Val Ser His Gly Trp Leu Tyr  
 85 90 95  
 Glu Gly Leu Ser Arg Glu Lys Ala Glu Glu Leu Leu Leu Leu Pro Gly  
 100 105 110  
 Asn Pro Gly Gly Ala Phe Leu Ile Arg Glu Ser Gln Thr Arg Arg Gly  
 115 120 125  
 Ser Tyr Ser Leu Ser Val Arg Leu Ser Arg Pro Ala Ser Trp Asp Arg  
 130 135 140  
 Ile Arg His Tyr Arg Ile His Cys Leu Asp Asn Gly Trp Leu Tyr Ile  
 145 150 155 160  
 Ser Pro Arg Leu Thr Phe Pro Ser Leu Gln Ala Leu Val Asp His Tyr  
 165 170 175  
 Ser Glu Leu Ala Asp Asp Ile Cys Cys Leu Leu Lys Glu Pro Cys Val  
 180 185 190  
 Leu Gln Arg Ala Gly Pro Leu Pro Gly Lys Asp Ile Pro Leu Pro Val  
 195 200 205  
 Thr Val Gln Arg Thr Pro Leu Asn Trp Lys Glu Leu Asp Ser Ser Leu  
 210 215 220  
 Leu Phe Ser Glu Ala Ala Thr Gly Glu Glu Ser Leu Leu Ser Glu Gly  
 225 230 235 240  
 Leu Arg Glu Ser Leu Ser Phe Tyr Ile Ser Leu Asn Asp Glu Ala Val

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Ser Leu Asp Asp Ala		
260		
<210> 78		
<211> 197		
<212> PRT		
<213> Homo sapiens		
<400> 78		
Asp Gly Asp Trp Trp Thr Val Leu Ser Glu Val Ser Gly Arg Glu Tyr		
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Asn Ile Pro Ser Val His Val Ala Lys Val Ser His Gly Trp Leu Tyr		
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Glu Gly Leu Ser Arg Glu Lys Ala Glu Glu Leu Leu Leu Leu Pro Gly		
35	40	45
Asn Pro Gly Gly Ala Phe Leu Ile Arg Glu Ser Gln Thr Arg Arg Gly		
50	55	60
Ser Tyr Ser Leu Ser Val Arg Leu Ser Arg Pro Ala Ser Trp Asp Arg		
65	70	75
Ile Arg His Tyr Arg Ile His Cys Leu Asp Asn Gly Trp Leu Tyr Ile		
85	90	95
Ser Pro Arg Leu Thr Phe Pro Ser Leu Gln Ala Leu Val Asp His Tyr		
100	105	110
Ser Glu Leu Ala Asp Asp Ile Cys Cys Leu Leu Lys Glu Pro Cys Val		
115	120	125
Leu Gln Arg Ala Gly Pro Leu Pro Gly Lys Asp Ile Pro Leu Pro Val		
130	135	140
Thr Val Gln Arg Thr Pro Leu Asn Trp Lys Glu Leu Asp Ser Ser Leu		
145	150	155
Leu Phe Ser Glu Ala Ala Thr Gly Glu Glu Ser Leu Leu Ser Glu Gly		
165	170	175
Leu Arg Glu Ser Leu Ser Phe Tyr Ile Ser Leu Asn Asp Glu Ala Val		
180	185	190
Ser Leu Asp Asp Ala		
195		

<210> 79  
 <211> 179  
 <212> PRT  
 <213> Mus musculus

<400> 79

Met Pro Ser Val Tyr Val Ala Lys Val Ala His Gly Trp Leu Tyr Glu  
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Gly Leu Ser Arg Glu Lys Ala Glu Glu Leu Leu Leu Pro Gly Asn  
20 25 30

Pro Gly Gly Ala Phe Leu Ile Arg Glu Ser Gln Thr Arg Arg Gly Cys  
35 40 45

Tyr Ser Leu Ser Val Arg Leu Ser Arg Pro Ala Ser Trp Asp Arg Ile  
50 55 60

Arg His Tyr Arg Ile Gln Arg Leu Asp Asn Gly Trp Leu Tyr Ile Ser  
65 70 75 80

Pro Arg Leu Thr Phe Pro Ser Leu His Ala Leu Val Glu His Tyr Ser  
85 90 95

Glu Leu Ala Asp Gly Ile Cys Cys Pro Leu Arg Glu Pro Cys Val Leu  
100 105 110

Gln Lys Leu Gly Pro Leu Pro Gly Lys Asp Thr Pro Pro Pro Val Thr  
115 120 125

Val Pro Thr Ser Ser Leu Asn Trp Lys Lys Leu Asp Arg Ser Leu Leu  
130 135 140

Phe Leu Glu Ala Pro Ala Ser Gly Glu Ala Ser Leu Leu Ser Glu Gly  
145 150 155 160

Leu Arg Glu Ser Leu Ser Ser Tyr Ile Ser Leu Ala Glu Asp Pro Leu  
165 170 175

Asp Asp Ala

<210> 80

<211> 281

<212> PRT

<213> Mus musculus

<400> 80

Met Gly Asn Ser Met Lys Ser Thr Ser Pro Pro Ser Glu Arg Pro Leu  
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Ser Ser Ser Glu Gly Leu Glu Ser Asp Phe Leu Ala Val Leu Thr Asp  
20 25 30

Tyr Pro Ser Pro Asp Ile Ser Pro Pro Ile Phe Arg Arg Gly Glu Lys  
35 40 45

Leu Arg Val Ile Ser Asp Glu Gly Gly Trp Trp Lys Ala Ile Ser Leu  
50 55 60

Ser Thr Gly Arg Glu Ser Tyr Ile Pro Gly Ile Cys Val Ala Arg Val



65		70		75		80
Tyr His Gly Trp Leu Phe Glu Gly Leu Gly Arg Asp Lys Ala Glu Glu						
	85			90		95
Leu Leu Gln Leu Pro Asp Thr Lys Ile Gly Ser Phe Met Ile Arg Glu						
	100		105			110
Ser Glu Thr Lys Lys Gly Phe Tyr Ser Leu Ser Val Arg His Arg Gln						
	115		120		125	
Val Lys His Tyr Arg Ile Phe Arg Leu Pro Asn Asn Trp Tyr Tyr Ile						
	130		135		140	
Ser Pro Arg Leu Thr Phe Gln Cys Leu Glu Asp Leu Val Thr His Tyr						
	145		150		155	160
Ser Glu Val Ala Asp Gly Leu Cys Cys Val Leu Thr Thr Pro Cys Leu						
	165		170			175
Ala Gln Asn Ile Pro Ala Pro Thr Ser His Pro Ser Pro Cys Thr Ser						
	180		185			190
Pro Gly Ser Pro Val Thr Leu Arg Gln Lys Thr Phe Asp Trp Lys Arg						
	195		200		205	
Val Ser Arg Leu Gln Glu Gly Ser Glu Gly Ala Glu Asn Pro Leu Arg						
	210		215		220	
Val Asp Glu Ser Leu Phe Ser Tyr Gly Leu Arg Glu Ser Ile Ala Ser						
	225		230		235	240
Tyr Leu Ser Leu Thr Gly Asp Asp Ser Ser Ser Phe Asp Arg Lys Lys						
	245		250			255
Lys Ser Leu Ser Leu Met Tyr Thr Gly Ser Lys Arg Lys Ser Ser Phe						
	260		265			270
Phe Ser Ala Pro Gln Tyr Phe Glu Asp						
	275		280			

<210> 81  
 <211> 276  
 <212> PRT  
 <213> Homo sapiens

<400> 81  
 Met Gly Asn Ser Met Lys Ser Thr Pro Ala Pro Ala Glu Arg Pro Leu  
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 Tyr Pro Ser Pro Asp Ile Ser Pro Pro Ile Phe Arg Arg Gly Glu Lys  
 35 40 45

Leu Arg Val Ile Ser Asp Glu Gly Gly Trp Trp Lys Ala Ile Ser Leu  
 50 55 60  
 Ser Thr Gly Arg Glu Ser Tyr Ile Pro Gly Ile Cys Val Ala Arg Val  
 65 70 75 80  
 Tyr His Gly Trp Leu Phe Glu Gly Leu Gly Arg Asp Lys Ala Glu Glu  
 85 90 95  
 Leu Leu Gln Leu Pro Asp Thr Lys Val Gly Ser Phe Met Ile Arg Glu  
 100 105 110  
 Ser Glu Thr Lys Lys Gly Phe Tyr Ser Leu Ser Val Arg His Arg Gln  
 115 120 125  
 Val Lys His Tyr Arg Ile Phe Arg Leu Pro Asn Asn Trp Tyr Tyr Ile  
 130 135 140  
 Ser Pro Arg Leu Thr Phe Gln Cys Leu Glu Asp Leu Val Asn His Tyr  
 145 150 155 160  
 Ser Glu Val Ala Asp Gly Leu Cys Cys Val Leu Thr Thr Pro Cys Leu  
 165 170 175  
 Thr Gln Ser Thr Ala Ala Pro Ala Val Arg Ala Ser Ser Ser Pro Val  
 180 185 190  
 Thr Leu Arg Gln Lys Thr Val Asp Trp Arg Arg Val Ser Arg Leu Gln  
 195 200 205  
 Glu Asp Pro Glu Gly Thr Glu Asn Pro Leu Gly Val Asp Glu Ser Leu  
 210 215 220  
 Phe Ser Tyr Gly Leu Arg Glu Ser Ile Ala Ser Tyr Leu Ser Leu Thr  
 225 230 235 240  
 Ser Glu Asp Asn Thr Ser Phe Asp Arg Lys Lys Lys Ser Ile Ser Leu  
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 Met Tyr Gly Gly Ser Lys Arg Lys Ser Ser Phe Phe Ser Ser Pro Pro  
 260 265 270  
 Tyr Phe Glu Asp  
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<210> 82  
 <211> 5193  
 <212> DNA  
 <213> Homo sapiens

<400> 82  
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ccgcatcctg gaggcggcaa agggtgaaat ccgcattgat ggcctcaatg tggcagacat 4140
cggcctccat gacctgcgt ctcagctgac catcatccc caggacccca tcctgttctc 4200
ggggaccctg cgcatagaacc tggaccctt cggcagctac tcagaggagg acatttggtg 4260
ggctttggag ctgtcccacc tgcacacgtt tgtgagctcc cagccggcag gcctggactt 4320
ccagtgtca gagggcgggg agaattctcag cgtgggccag aggcagctcg tgtgcctggc 4380
ccgagccctg ctccgcaaga gccgcatcct ggttttagac gaggccacag ctgccatcga 4440
cctggagact gacaacctca tccaggctac catccgcacc cagtttgata cctgcaactgt 4500
cctgaccatc gcacaccggc ttaacactat catggactac accagggtcc tggctcctgga 4560
caaaggagta gtagctgaat ttgattctcc agccaacctc attgcagcta gaggcattct 4620
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cctttcctgg ttttcatcag gaaggaaatg acaccaata tgtccgcaga atggacttga 4740
tagcaaacac tgggggcacc ttaagathtt gcacctgtaa agtgccttac agggtaactg 4800
tgctgaatgc tttagatgag gaaatgatcc ccaagtgggt aatgacacgc ctaaggtcac 4860
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agaagacagc tgctgggtca ggcaccctc aggaactcag tcctgtactc tgggggtgctg 5100
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aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 5193

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<210> 83  
 <211> 1527  
 <212> PRT  
 <213> Homo sapiens

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<400> 83
Met Asp Ala Leu Cys Gly Ser Gly Glu Leu Gly Ser Lys Phe Trp Asp
  1              5              10              15

Ser Asn Leu Ser Val His Thr Glu Asn Pro Asp Leu Thr Pro Cys Phe
      20              25              30

Gln Asn Ser Leu Leu Ala Trp Val Pro Cys Ile Tyr Leu Trp Val Ala
      35              40              45

Leu Pro Cys Tyr Leu Leu Tyr Leu Arg His His Cys Arg Gly Tyr Ile
      50              55              60

Ile Leu Ser His Leu Ser Lys Leu Lys Met Val Leu Gly Val Leu Leu
      65              70              75              80

Trp Cys Val Ser Trp Ala Asp Leu Phe Tyr Ser Phe His Gly Leu Val
      85              90              95

His Gly Arg Ala Pro Ala Pro Val Phe Phe Val Thr Pro Leu Val Val
      100             105             110

Gly Val Thr Met Leu Leu Ala Thr Leu Leu Ile Gln Tyr Glu Arg Leu
      115             120             125

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Gln Gly Val Gln Ser Ser Gly Val Leu Ile Ile Phe Trp Phe Leu Cys  
 130 135 140  
 Val Val Cys Ala Ile Val Pro Phe Arg Ser Lys Ile Leu Leu Ala Lys  
 145 150 155 160  
 Ala Glu Gly Glu Ile Ser Asp Pro Phe Arg Phe Thr Thr Phe Tyr Ile  
 165 170 175  
 His Phe Ala Leu Val Leu Ser Ala Leu Ile Leu Ala Cys Phe Arg Glu  
 180 185 190  
 Lys Pro Pro Phe Phe Ser Ala Lys Asn Val Asp Pro Asn Pro Tyr Pro  
 195 200 205  
 Glu Thr Ser Ala Gly Phe Leu Ser Arg Leu Phe Phe Trp Trp Phe Thr  
 210 215 220  
 Lys Met Ala Ile Tyr Gly Tyr Arg His Pro Leu Glu Glu Lys Asp Leu  
 225 230 235 240  
 Trp Ser Leu Lys Glu Glu Asp Arg Ser Gln Met Val Val Gln Gln Leu  
 245 250 255  
 Leu Glu Ala Trp Arg Lys Gln Glu Lys Gln Thr Ala Arg His Lys Ala  
 260 265 270  
 Ser Ala Ala Pro Gly Lys Asn Ala Ser Gly Glu Asp Glu Val Leu Leu  
 275 280 285  
 Gly Ala Arg Pro Arg Pro Arg Lys Pro Ser Phe Leu Lys Ala Leu Leu  
 290 295 300  
 Ala Thr Phe Gly Ser Ser Phe Leu Ile Ser Ala Cys Phe Lys Leu Ile  
 305 310 315 320  
 Gln Asp Leu Leu Ser Phe Ile Asn Pro Gln Leu Leu Ser Ile Leu Ile  
 325 330 335  
 Arg Phe Ile Ser Asn Pro Met Ala Pro Ser Trp Trp Gly Phe Leu Val  
 340 345 350  
 Ala Gly Leu Met Phe Leu Cys Ser Met Met Gln Ser Leu Ile Leu Gln  
 355 360 365  
 His Tyr Tyr His Tyr Ile Phe Val Thr Gly Val Lys Phe Arg Thr Gly  
 370 375 380  
 Ile Met Gly Val Ile Tyr Arg Lys Ala Leu Val Ile Thr Asn Ser Val  
 385 390 395 400  
 Lys Arg Ala Ser Thr Val Gly Glu Ile Val Asn Leu Met Ser Val Asp  
 405 410 415  
 Ala Gln Arg Phe Met Asp Leu Ala Pro Phe Leu Asn Leu Leu Trp Ser  
 420 425 430

Ala	Pro	Leu	Gln	Ile	Ile	Leu	Ala	Ile	Tyr	Phe	Leu	Trp	Gln	Asn	Leu		
		435						440					445				
Gly	Pro	Ser	Val	Leu	Ala	Gly	Val	Ala	Phe	Met	Val	Leu	Leu	Ile	Pro		
		450				455					460						
Leu	Asn	Gly	Ala	Val	Ala	Val	Lys	Met	Arg	Ala	Phe	Gln	Val	Lys	Gln		
465					470					475					480		
Met	Lys	Leu	Lys	Asp	Ser	Arg	Ile	Lys	Leu	Met	Ser	Glu	Ile	Leu	Asn		
				485					490						495		
Gly	Ile	Lys	Val	Leu	Lys	Leu	Tyr	Ala	Trp	Glu	Pro	Ser	Phe	Leu	Lys		
			500					505						510			
Gln	Val	Glu	Gly	Ile	Arg	Gln	Gly	Glu	Leu	Gln	Leu	Leu	Arg	Thr	Ala		
		515					520						525				
Ala	Tyr	Leu	His	Thr	Thr	Thr	Thr	Phe	Thr	Trp	Met	Cys	Ser	Pro	Phe		
		530					535				540						
Leu	Val	Thr	Leu	Ile	Thr	Leu	Trp	Val	Tyr	Val	Tyr	Val	Asp	Pro	Asn		
545					550					555					560		
Asn	Val	Leu	Asp	Ala	Glu	Lys	Ala	Phe	Val	Ser	Val	Ser	Leu	Phe	Asn		
				565					570						575		
Ile	Leu	Arg	Leu	Pro	Leu	Asn	Met	Leu	Pro	Gln	Leu	Ile	Ser	Asn	Leu		
			580					585						590			
Thr	Gln	Ala	Ser	Val	Ser	Leu	Lys	Arg	Ile	Gln	Gln	Phe	Leu	Ser	Gln		
		595					600						605				
Glu	Glu	Leu	Asp	Pro	Gln	Ser	Val	Glu	Arg	Lys	Thr	Ile	Ser	Pro	Gly		
		610				615					620						
Tyr	Ala	Ile	Thr	Ile	His	Ser	Gly	Thr	Phe	Thr	Trp	Ala	Gln	Asp	Leu		
625					630					635					640		
Pro	Pro	Thr	Leu	His	Ser	Leu	Asp	Ile	Gln	Val	Pro	Lys	Gly	Ala	Leu		
				645					650					655			
Val	Ala	Val	Val	Gly	Pro	Val	Gly	Cys	Gly	Lys	Ser	Ser	Leu	Val	Ser		
			660					665						670			
Ala	Leu	Leu	Gly	Glu	Met	Glu	Lys	Leu	Glu	Gly	Lys	Val	His	Met	Lys		
		675					680						685				
Gly	Ser	Val	Ala	Tyr	Val	Pro	Gln	Gln	Ala	Trp	Ile	Gln	Asn	Cys	Thr		
		690				695					700						
Leu	Gln	Glu	Asn	Val	Leu	Phe	Gly	Lys	Ala	Leu	Asn	Pro	Lys	Arg	Tyr		
705					710					715					720		
Gln	Gln	Thr	Leu	Glu	Ala	Cys	Ala	Leu	Leu	Ala	Asp	Leu	Glu	Met	Leu		
				725					730						735		

Pro Gly Gly Asp Gln Thr Glu Ile Gly Glu Lys Gly Ile Asn Leu Ser	740	745	750
Gly Gly Gln Arg Gln Arg Val Ser Leu Ala Arg Ala Val Tyr Ser Asp	755	760	765
Ala Asp Ile Phe Leu Leu Asp Asp Pro Leu Ser Ala Val Asp Ser His	770	775	780
Val Ala Lys His Ile Phe Asp His Val Ile Gly Pro Glu Gly Val Leu	785	790	795
Ala Gly Lys Thr Arg Val Leu Val Thr His Gly Ile Ser Phe Leu Pro	805	810	815
Gln Thr Asp Phe Ile Ile Val Leu Ala Asp Gly Gln Val Ser Glu Met	820	825	830
Gly Pro Tyr Pro Ala Leu Leu Gln Arg Asn Gly Ser Phe Ala Asn Phe	835	840	845
Leu Cys Asn Tyr Ala Pro Asp Glu Asp Gln Gly His Leu Glu Asp Ser	850	855	860
Trp Thr Ala Leu Glu Gly Ala Glu Asp Lys Glu Ala Leu Leu Ile Glu	865	870	875
Asp Thr Leu Ser Asn His Thr Asp Leu Thr Asp Asn Asp Pro Val Thr	885	890	895
Tyr Val Val Gln Lys Gln Phe Met Arg Gln Leu Ser Ala Leu Ser Ser	900	905	910
Asp Gly Glu Gly Gln Gly Arg Pro Val Pro Arg Arg His Leu Gly Pro	915	920	925
Ser Glu Lys Val Gln Val Thr Glu Ala Lys Ala Asp Gly Ala Leu Thr	930	935	940
Gln Glu Glu Lys Ala Ala Ile Gly Thr Val Glu Leu Ser Val Phe Trp	945	950	955
Asp Tyr Ala Lys Ala Val Gly Leu Cys Thr Thr Leu Ala Ile Cys Leu	965	970	975
Leu Tyr Val Gly Gln Ser Ala Ala Ala Ile Gly Ala Asn Val Trp Leu	980	985	990
Ser Ala Trp Thr Asn Asp Ala Met Ala Asp Ser Arg Gln Asn Asn Thr	995	1000	1005
Ser Leu Arg Leu Gly Val Tyr Ala Ala Leu Gly Ile Leu Gln Gly Phe	1010	1015	1020
Leu Val Met Leu Ala Ala Met Ala Met Ala Ala Gly Gly Ile Gln Ala	1025	1030	1035
			1040

Ala Arg Val Leu His Gln Ala Leu Leu His Asn Lys Ile Arg Ser Pro  
 1045 1050 1055  
 Gln Ser Phe Phe Asp Thr Thr Pro Ser Gly Arg Ile Leu Asn Cys Phe  
 1060 1065 1070  
 Ser Lys Asp Ile Tyr Val Val Asp Glu Val Leu Ala Pro Val Ile Leu  
 1075 1080 1085  
 Met Leu Leu Asn Ser Phe Phe Asn Ala Ile Ser Thr Leu Val Val Ile  
 1090 1095 1100  
 Met Ala Ser Thr Pro Leu Phe Thr Val Val Ile Leu Pro Leu Ala Val  
 1105 1110 1115 1120  
 Leu Tyr Thr Leu Val Gln Arg Phe Tyr Ala Ala Thr Ser Arg Gln Leu  
 1125 1130 1135  
 Lys Arg Leu Glu Ser Val Ser Arg Ser Pro Ile Tyr Ser His Phe Ser  
 1140 1145 1150  
 Glu Thr Val Thr Gly Ala Ser Val Ile Arg Ala Tyr Asn Arg Ser Arg  
 1155 1160 1165  
 Asp Phe Glu Ile Ile Ser Asp Thr Lys Val Asp Ala Asn Gln Arg Ser  
 1170 1175 1180  
 Cys Tyr Pro Tyr Ile Ile Ser Asn Arg Trp Leu Ser Ile Gly Val Glu  
 1185 1190 1195 1200  
 Phe Val Gly Asn Cys Val Val Leu Phe Ala Ala Leu Phe Ala Val Ile  
 1205 1210 1215  
 Gly Arg Ser Ser Leu Asn Pro Gly Leu Val Gly Leu Ser Val Ser Tyr  
 1220 1225 1230  
 Ser Leu Gln Val Thr Phe Ala Leu Asn Trp Met Ile Arg Met Met Ser  
 1235 1240 1245  
 Asp Leu Glu Ser Asn Ile Val Ala Val Glu Arg Val Lys Glu Tyr Ser  
 1250 1255 1260  
 Lys Thr Glu Thr Glu Ala Pro Trp Val Val Glu Gly Ser Arg Pro Pro  
 1265 1270 1275 1280  
 Glu Gly Trp Pro Pro Arg Gly Glu Val Glu Phe Arg Asn Tyr Ser Val  
 1285 1290 1295  
 Arg Tyr Arg Pro Gly Leu Asp Leu Val Leu Arg Asp Leu Ser Leu His  
 1300 1305 1310  
 Val His Gly Gly Glu Lys Val Gly Ile Val Gly Arg Thr Gly Ala Gly  
 1315 1320 1325  
 Lys Ser Ser Met Thr Leu Cys Leu Phe Arg Ile Leu Glu Ala Ala Lys  
 1330 1335 1340



Gly Glu Ile Arg Ile Asp Gly Leu Asn Val Ala Asp Ile Gly Leu His  
 1345                      1350                      1355                      1360  
 Asp Leu Arg Ser Gln Leu Thr Ile Ile Pro Gln Asp Pro Ile Leu Phe  
                     1365                      1370                      1375  
 Ser Gly Thr Leu Arg Met Asn Leu Asp Pro Phe Gly Ser Tyr Ser Glu  
                     1380                      1385                      1390  
 Glu Asp Ile Trp Trp Ala Leu Glu Leu Ser His Leu His Thr Phe Val  
                     1395                      1400                      1405  
 Ser Ser Gln Pro Ala Gly Leu Asp Phe Gln Cys Ser Glu Gly Gly Glu  
                     1410                      1415                      1420  
 Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu Ala Arg Ala Leu  
 1425                      1430                      1435                      1440  
 Leu Arg Lys Ser Arg Ile Leu Val Leu Asp Glu Ala Thr Ala Ala Ile  
                     1445                      1450                      1455  
 Asp Leu Glu Thr Asp Asn Leu Ile Gln Ala Thr Ile Arg Thr Gln Phe  
                     1460                      1465                      1470  
 Asp Thr Cys Thr Val Leu Thr Ile Ala His Arg Leu Asn Thr Ile Met  
                     1475                      1480                      1485  
 Asp Tyr Thr Arg Val Leu Val Leu Asp Lys Gly Val Val Ala Glu Phe  
                     1490                      1495                      1500  
 Asp Ser Pro Ala Asn Leu Ile Ala Ala Arg Gly Ile Phe Tyr Gly Met  
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 Ala Arg Asp Ala Gly Leu Ala  
                     1525

<210> 84  
 <211> 1527  
 <212> PRT  
 <213> Homo sapiens

<400> 84  
 Met Asp Ala Leu Cys Gly Ser Gly Glu Leu Gly Ser Lys Phe Trp Asp  
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 Ser Asn Leu Ser Val His Thr Glu Asn Pro Asp Leu Thr Pro Cys Phe  
                     20                    25                    30  
 Gln Asn Ser Leu Leu Ala Trp Val Pro Cys Ile Tyr Leu Trp Val Ala  
                     35                    40                    45  
 Leu Pro Cys Tyr Leu Leu Tyr Leu Arg His His Cys Arg Gly Tyr Ile  
                     50                    55                    60  
 Ile Leu Ser His Leu Ser Lys Leu Lys Met Val Leu Gly Val Leu Leu  
                     65                    70                    75                    80

Trp Cys Val Ser Trp Ala Asp Leu Phe Tyr Ser Phe His Gly Leu Val  
 85 90 95  
 His Gly Arg Ala Pro Ala Pro Val Phe Phe Val Thr Pro Leu Val Val  
 100 105 110  
 Gly Val Thr Met Leu Leu Ala Thr Leu Leu Ile Gln Tyr Glu Arg Leu  
 115 120 125  
 Gln Gly Val Gln Ser Ser Gly Val Leu Ile Ile Phe Trp Phe Leu Cys  
 130 135 140  
 Val Val Cys Ala Ile Val Pro Phe Arg Ser Lys Ile Leu Leu Ala Lys  
 145 150 155 160  
 Ala Glu Gly Glu Ile Ser Asp Pro Phe Arg Phe Thr Thr Phe Tyr Ile  
 165 170 175  
 His Phe Ala Leu Val Leu Ser Ala Leu Ile Leu Ala Cys Phe Arg Glu  
 180 185 190  
 Lys Pro Pro Phe Phe Ser Ala Lys Asn Val Asp Pro Asn Pro Tyr Pro  
 195 200 205  
 Glu Thr Ser Ala Gly Phe Leu Ser Arg Leu Phe Phe Trp Trp Phe Thr  
 210 215 220  
 Lys Met Ala Ile Tyr Gly Tyr Arg His Pro Leu Glu Glu Lys Asp Leu  
 225 230 235 240  
 Trp Ser Leu Lys Glu Glu Asp Arg Ser Gln Met Val Val Gln Gln Leu  
 245 250 255  
 Leu Glu Ala Trp Arg Lys Gln Glu Lys Gln Thr Ala Arg His Lys Ala  
 260 265 270  
 Ser Ala Ala Pro Gly Lys Asn Ala Ser Gly Glu Asp Glu Val Leu Leu  
 275 280 285  
 Gly Ala Arg Pro Arg Pro Arg Lys Pro Ser Phe Leu Lys Ala Leu Leu  
 290 295 300  
 Ala Thr Phe Gly Ser Ser Phe Leu Ile Ser Ala Cys Phe Lys Leu Ile  
 305 310 315 320  
 Gln Asp Leu Leu Ser Phe Ile Asn Pro Gln Leu Leu Ser Ile Leu Ile  
 325 330 335  
 Arg Phe Ile Ser Asn Pro Met Ala Pro Ser Trp Trp Gly Phe Leu Val  
 340 345 350  
 Ala Gly Leu Met Phe Leu Cys Ser Met Met Gln Ser Leu Ile Leu Gln  
 355 360 365  
 His Tyr Tyr His Tyr Ile Phe Val Thr Gly Val Lys Phe Arg Thr Gly  
 370 375 380

Ile Met Gly Val	Ile Tyr Arg Lys Ala Leu Val	Ile Thr Asn Ser Val
385	390	395 400
Lys Arg Ala Ser	Thr Val Gly Glu Ile Val Asn Leu Met Ser Val Asp	
	405	410 415
Ala Gln Arg Phe Met Asp Leu Ala Pro Phe Leu Asn Leu Leu Trp Ser		
	420	425 430
Ala Pro Leu Gln Ile Ile Leu Ala Ile Tyr Phe Leu Trp Gln Asn Leu		
	435	440 445
Gly Pro Ser Val Leu Ala Gly Val Ala Phe Met Val Leu Leu Ile Pro		
	450	455 460
Leu Asn Gly Ala Val Ala Val Lys Met Arg Ala Phe Gln Val Lys Gln		
	465	470 475 480
Met Lys Leu Lys Asp Ser Arg Ile Lys Leu Met Ser Glu Ile Leu Asn		
	485	490 495
Gly Ile Lys Val Leu Lys Leu Tyr Ala Trp Glu Pro Ser Phe Leu Lys		
	500	505 510
Gln Val Glu Gly Ile Arg Gln Gly Glu Leu Gln Leu Leu Arg Thr Ala		
	515	520 525
Ala Tyr Leu His Thr Thr Thr Thr Phe Thr Trp Met Cys Ser Pro Phe		
	530	535 540
Leu Val Thr Leu Ile Thr Leu Trp Val Tyr Val Tyr Val Asp Pro Asn		
	545	550 555 560
Asn Val Leu Asp Ala Glu Lys Ala Phe Val Ser Val Ser Leu Phe Asn		
	565	570 575
Ile Leu Arg Leu Pro Leu Asn Met Leu Pro Gln Leu Ile Ser Asn Leu		
	580	585 590
Thr Gln Ala Ser Val Ser Leu Lys Arg Ile Gln Gln Phe Leu Ser Gln		
	595	600 605
Glu Glu Leu Asp Pro Gln Ser Val Glu Arg Lys Thr Ile Ser Pro Gly		
	610	615 620
Tyr Ala Ile Thr Ile His Ser Gly Thr Phe Thr Trp Ala Gln Asp Leu		
	625	630 635 640
Pro Pro Thr Leu His Ser Leu Asp Ile Gln Val Pro Lys Gly Ala Leu		
	645	650 655
Val Ala Val Val Gly Pro Val Gly Cys Gly Lys Ser Ser Leu Val Ser		
	660	665 670
Ala Leu Leu Gly Glu Met Glu Lys Leu Glu Gly Lys Val His Met Lys		
	675	680 685

Gly	Ser	Val	Ala	Tyr	Val	Pro	Gln	Gln	Ala	Trp	Ile	Gln	Asn	Cys	Thr	690	695	700	
Leu	Gln	Glu	Asn	Val	Leu	Phe	Gly	Lys	Ala	Leu	Asn	Pro	Lys	Arg	Tyr	705	710	715	720
Gln	Gln	Thr	Leu	Glu	Ala	Cys	Ala	Leu	Leu	Ala	Asp	Leu	Glu	Met	Leu	725	730	735	
Pro	Gly	Gly	Asp	Gln	Thr	Glu	Ile	Gly	Glu	Lys	Gly	Ile	Asn	Leu	Ser	740	745	750	
Gly	Gly	Gln	Arg	Gln	Arg	Val	Ser	Leu	Ala	Arg	Ala	Val	Tyr	Ser	Asp	755	760	765	
Ala	Asp	Ile	Phe	Leu	Leu	Asp	Asp	Pro	Leu	Ser	Ala	Val	Asp	Ser	His	770	775	780	
Val	Ala	Lys	His	Ile	Phe	Asp	His	Val	Ile	Gly	Pro	Glu	Gly	Val	Leu	785	790	795	800
Ala	Gly	Lys	Thr	Arg	Val	Leu	Val	Thr	His	Gly	Ile	Ser	Phe	Leu	Pro	805	810	815	
Gln	Thr	Asp	Phe	Ile	Ile	Val	Leu	Ala	Asp	Gly	Gln	Val	Ser	Glu	Met	820	825	830	
Gly	Pro	Tyr	Pro	Ala	Leu	Leu	Gln	Arg	Asn	Gly	Ser	Phe	Ala	Asn	Phe	835	840	845	
Leu	Cys	Asn	Tyr	Ala	Pro	Asp	Glu	Asp	Gln	Gly	His	Leu	Glu	Asp	Ser	850	855	860	
Trp	Thr	Ala	Leu	Glu	Gly	Ala	Glu	Asp	Lys	Glu	Ala	Leu	Leu	Ile	Glu	865	870	875	880
Asp	Thr	Leu	Ser	Asn	His	Thr	Asp	Leu	Thr	Asp	Asn	Asp	Pro	Val	Thr	885	890	895	
Tyr	Val	Val	Gln	Lys	Gln	Phe	Met	Arg	Gln	Leu	Ser	Ala	Leu	Ser	Ser	900	905	910	
Asp	Gly	Glu	Gly	Gln	Gly	Arg	Pro	Val	Pro	Arg	Arg	His	Leu	Gly	Pro	915	920	925	
Ser	Glu	Lys	Val	Gln	Val	Thr	Glu	Ala	Lys	Ala	Asp	Gly	Ala	Leu	Thr	930	935	940	
Gln	Glu	Glu	Lys	Ala	Ala	Ile	Gly	Thr	Val	Glu	Leu	Ser	Val	Phe	Trp	945	950	955	960
Asp	Tyr	Ala	Lys	Ala	Val	Gly	Leu	Cys	Thr	Thr	Leu	Ala	Ile	Cys	Leu	965	970	975	
Leu	Tyr	Val	Gly	Gln	Ser	Ala	Ala	Ala	Ile	Gly	Ala	Asn	Val	Trp	Leu	980	985	990	

Ser Ala Trp Thr Asn Asp Ala Met Ala Asp Ser Arg Gln Asn Asn Thr  
 995 1000 1005  
 Ser Leu Arg Leu Gly Val Tyr Ala Ala Leu Gly Ile Leu Gln Gly Phe  
 1010 1015 1020  
 Leu Val Met Leu Ala Ala Met Ala Met Ala Ala Gly Gly Ile Gln Ala  
 1025 1030 1035 1040  
 Ala Arg Val Leu His Gln Ala Leu Leu His Asn Lys Ile Arg Ser Pro  
 1045 1050 1055  
 Gln Ser Phe Phe Asp Thr Thr Pro Ser Gly Arg Ile Leu Asn Cys Phe  
 1060 1065 1070  
 Ser Lys Asp Ile Tyr Val Val Asp Glu Val Leu Ala Pro Val Ile Leu  
 1075 1080 1085  
 Met Leu Leu Asn Ser Phe Phe Asn Ala Ile Ser Thr Leu Val Val Ile  
 1090 1095 1100  
 Met Ala Ser Thr Pro Leu Phe Thr Val Val Ile Leu Pro Leu Ala Val  
 1105 1110 1115 1120  
 Leu Tyr Thr Leu Val Gln Arg Phe Tyr Ala Ala Thr Ser Arg Gln Leu  
 1125 1130 1135  
 Lys Arg Leu Glu Ser Val Ser Arg Ser Pro Ile Tyr Ser His Phe Ser  
 1140 1145 1150  
 Glu Thr Val Thr Gly Ala Ser Val Ile Arg Ala Tyr Asn Arg Ser Arg  
 1155 1160 1165  
 Asp Phe Glu Ile Ile Ser Asp Thr Lys Val Asp Ala Asn Gln Arg Ser  
 1170 1175 1180  
 Cys Tyr Pro Tyr Ile Ile Ser Asn Arg Trp Leu Ser Ile Gly Val Glu  
 1185 1190 1195 1200  
 Phe Val Gly Asn Cys Val Val Leu Phe Ala Ala Leu Phe Ala Val Ile  
 1205 1210 1215  
 Gly Arg Ser Ser Leu Asn Pro Gly Leu Val Gly Leu Ser Val Ser Tyr  
 1220 1225 1230  
 Ser Leu Gln Val Thr Phe Ala Leu Asn Trp Met Ile Arg Met Met Ser  
 1235 1240 1245  
 Asp Leu Glu Ser Asn Ile Val Ala Val Glu Arg Val Lys Glu Tyr Ser  
 1250 1255 1260  
 Lys Thr Glu Thr Glu Ala Pro Trp Val Val Glu Gly Ser Arg Pro Pro  
 1265 1270 1275 1280  
 Glu Gly Trp Pro Pro Arg Gly Glu Val Glu Phe Arg Asn Tyr Ser Val  
 1285 1290 1295

Arg Tyr Arg Pro Gly Leu Asp Leu Val Leu Arg Asp Leu Ser Leu His  
 1300 1305 1310

Val His Gly Gly Glu Lys Val Gly Ile Val Gly Arg Thr Gly Ala Gly  
 1315 1320 1325

Lys Ser Ser Met Thr Leu Cys Leu Phe Arg Ile Leu Glu Ala Ala Lys  
 1330 1335 1340

Gly Glu Ile Arg Ile Asp Gly Leu Asn Val Ala Asp Ile Gly Leu His  
 1345 1350 1355 1360

Asp Leu Arg Ser Gln Leu Thr Ile Ile Pro Gln Asp Pro Ile Leu Phe  
 1365 1370 1375

Ser Gly Thr Leu Arg Met Asn Leu Asp Pro Phe Gly Ser Tyr Ser Glu  
 1380 1385 1390

Glu Asp Ile Trp Trp Ala Leu Glu Leu Ser His Leu His Thr Phe Val  
 1395 1400 1405

Ser Ser Gln Pro Ala Gly Leu Asp Phe Gln Cys Ser Glu Gly Gly Glu  
 1410 1415 1420

Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu Ala Arg Ala Leu  
 1425 1430 1435 1440

Leu Arg Lys Ser Arg Ile Leu Val Leu Asp Glu Ala Thr Ala Ala Ile  
 1445 1450 1455

Asp Leu Glu Thr Asp Asn Leu Ile Gln Ala Thr Ile Arg Thr Gln Phe  
 1460 1465 1470

Asp Thr Cys Thr Val Leu Thr Ile Ala His Arg Leu Asn Thr Ile Met  
 1475 1480 1485

Asp Tyr Thr Arg Val Leu Val Leu Asp Lys Gly Val Val Ala Glu Phe  
 1490 1495 1500

Asp Ser Pro Ala Asn Leu Ile Ala Ala Arg Gly Ile Phe Tyr Gly Met  
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Ala Arg Asp Ala Gly Leu Ala  
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<210> 85

<211> 1522

<212> PRT

<213> Rattus norvegicus

<400> 85

Met Asp Arg Leu Cys Gly Ser Gly Glu Leu Gly Ser Lys Phe Trp Asp  
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Ser Asn Leu Thr Val Tyr Thr Asn Thr Pro Asp Leu Thr Pro Cys Phe

20

25

30

Gln Asn Ser Leu Leu Ala Trp Val Pro Cys Ile Tyr Leu Trp Ala Ala  
 35 40 45  
 Leu Pro Cys Tyr Leu Phe Tyr Leu Arg His His Arg Leu Gly Tyr Ile  
 50 55 60  
 Val Leu Ser Cys Leu Ser Arg Leu Lys Thr Ala Leu Gly Val Leu Leu  
 65 70 75 80  
 Trp Cys Ile Ser Trp Val Asp Leu Phe Tyr Ser Phe His Gly Leu Val  
 85 90 95  
 His Gly Ser Ser Pro Ala Pro Val Phe Phe Ile Thr Pro Leu Leu Val  
 100 105 110  
 Gly Ile Thr Met Leu Leu Ala Thr Leu Leu Ile Gln Tyr Glu Arg Leu  
 115 120 125  
 Arg Gly Val Arg Ser Ser Gly Val Leu Ile Ile Phe Trp Leu Leu Cys  
 130 135 140  
 Val Ile Cys Ala Ile Ile Pro Phe Arg Ser Lys Ile Leu Leu Ala Leu  
 145 150 155 160  
 Ala Glu Gly Lys Ile Leu Asp Pro Phe Arg Phe Thr Thr Phe Tyr Ile  
 165 170 175  
 Tyr Phe Ala Leu Val Leu Cys Ala Phe Ile Leu Ser Cys Phe Gln Glu  
 180 185 190  
 Lys Pro Pro Leu Phe Ser Pro Glu Asn Leu Asp Thr Asn Pro Cys Pro  
 195 200 205  
 Glu Ala Ser Ala Gly Phe Phe Ser Arg Leu Ser Phe Trp Trp Phe Thr  
 210 215 220  
 Lys Leu Ala Ile Leu Gly Tyr Arg Arg Pro Leu Glu Asp Ser Asp Leu  
 225 230 235 240  
 Trp Ser Leu Ser Glu Glu Asp Cys Ser His Lys Val Val Gln Arg Leu  
 245 250 255  
 Leu Glu Ala Trp Gln Lys Gln Gln Thr Gln Ala Ser Gly Pro Gln Thr  
 260 265 270  
 Ala Ala Leu Glu Pro Lys Ile Ala Gly Glu Asp Glu Val Leu Leu Lys  
 275 280 285  
 Ala Arg Pro Lys Thr Lys Lys Pro Ser Phe Leu Arg Ala Leu Val Arg  
 290 295 300  
 Thr Phe Thr Ser Ser Leu Leu Met Gly Ala Cys Phe Lys Leu Ile Gln  
 305 310 315 320  
 Asp Leu Ser Pro Ser Ser Thr His Ser Cys Ser Ala Ser Ser Ser Gly

			325					330					335				
Leu	Phe	Arg	Pro 340	His	Gly	Pro	Tyr	Trp 345	Trp	Gly	Phe	Leu	Leu 350	Ala	Gly		
Leu	Met	Phe 355	Val	Ser	Ser	Thr	Met 360	Gln	Thr	Leu	Ile	Leu 365	His	Gln	His		
Tyr	His 370	Cys	Ile	Phe	Val	Met 375	Ala	Leu	Arg	Ile	Arg 380	Thr	Ala	Ile	Ile		
Gly 385	Val	Ile	Tyr	Arg	Lys 390	Ala	Leu	Thr	Ile	Thr 395	Asn	Ser	Val	Lys	Arg 400		
Glu	Tyr	Thr	Val	Gly 405	Glu	Met	Val	Asn 410	Leu	Met	Ser	Val	Asp 415	Ala	Gln		
Arg	Phe	Met 420	Asp	Val	Ser	Pro	Phe 425	Ile	Asn	Leu	Leu	Trp 430	Ser	Ala	Pro		
Leu	Gln 435	Val	Ile	Leu	Ala	Ile	Tyr 440	Phe	Leu	Trp	Gln	Ile 445	Leu	Gly	Pro		
Ser 450	Ala	Leu	Ala	Gly	Val	Ala 455	Val	Ile	Val	Leu	Leu 460	Ile	Pro	Leu	Asn		
Gly 465	Ala	Val	Ser	Met	Lys 470	Met	Lys	Thr	Tyr	Gln 475	Val	Gln	Gln	Met	Lys 480		
Phe	Lys	Asp	Ser	Arg 485	Ile	Lys	Leu	Met 490	Ser	Glu	Ile	Leu	Asn 495	Gly	Ile		
Lys	Val	Leu	Lys 500	Leu	Tyr	Ala	Trp	Glu 505	Pro	Thr	Phe	Leu	Glu 510	Gln	Val		
Glu	Gly 515	Ile	Arg	Gln	Gly	Glu	Leu 520	Gln	Leu	Leu	Arg	Lys 525	Gly	Ala	Tyr		
Leu 530	Gln	Ala	Ile	Ser	Thr	Phe 535	Ile	Trp	Val	Cys	Thr 540	Pro	Phe	Met	Val		
Thr 545	Leu	Ile	Thr	Leu	Gly 550	Val	Tyr	Val	Cys 555	Val	Asp	Lys	Asn	Asn	Val 560		
Leu	Asp	Ala	Glu	Lys 565	Ala	Phe	Val	Ser 570	Leu	Ser	Leu	Phe	Asn 575	Ile	Leu		
Lys	Ile	Pro	Leu 580	Asn	Leu	Leu	Pro	Gln 585	Leu	Ile	Ser	Gly	Met 590	Thr	Gln		
Thr	Ser 595	Val	Ser	Leu	Lys	Arg	Ile 600	Gln	Asp	Phe	Leu	Asn 605	Gln	Asp	Glu		
Leu 610	Asp	Pro	Gln	Cys	Val	Glu 615	Arg	Lys	Thr	Ile	Ser 620	Pro	Gly	Arg	Ala		
Ile	Thr	Ile	His	Asn	Gly	Thr	Phe	Ser	Trp	Ser	Lys	Asp	Leu	Pro	Pro		



625		630		635		640
Thr Leu His Ser Ile Asn Ile Gln Ile Pro Lys Gly Ala Leu Val Ala						
	645			650		655
Val Val Gly Pro Val Gly Cys Gly Lys Ser Ser Leu Val Ser Ala Leu						
	660			665		670
Leu Gly Glu Met Glu Lys Leu Glu Gly Ala Val Ser Val Lys Gly Ser						
	675			680		685
Val Ala Tyr Val Pro Gln Gln Ala Trp Ile Gln Asn Cys Thr Leu Gln						
	690			695		700
Glu Asn Val Leu Phe Gly Gln Pro Met Asn Pro Lys Arg Tyr Gln Gln						
	705			710		715
Ala Leu Glu Thr Cys Ala Leu Leu Ala Asp Leu Asp Val Leu Pro Gly						
	725			730		735
Gly Asp Gln Thr Glu Ile Gly Glu Lys Gly Ile Asn Leu Ser Gly Gly						
	740			745		750
Gln Arg Gln Arg Val Ser Leu Ala Arg Ala Val Tyr Ser Asp Ala Asn						
	755			760		765
Ile Phe Leu Leu Asp Asp Pro Leu Ser Ala Val Asp Ser His Val Ala						
	770			775		780
Lys His Ile Phe Asp Gln Val Ile Gly Pro Glu Gly Val Leu Ala Gly						
	785			790		795
Lys Thr Arg Val Leu Val Thr His Gly Ile Ser Phe Leu Pro Gln Thr						
	805			810		815
Asp Phe Ile Ile Val Leu Ala Asp Gly Gln Ile Thr Glu Met Gly His						
	820			825		830
Tyr Ser Glu Leu Leu Gln His Asp Gly Ser Phe Ala Asn Phe Leu Arg						
	835			840		845
Asn Tyr Ala Pro Asp Glu Asn Gln Glu Ala Asn Glu Gly Val Leu Gln						
	850			855		860
His Ala Asn Glu Glu Val Leu Leu Leu Glu Asp Thr Leu Ser Thr His						
	865			870		875
Thr Asp Leu Thr Asp Thr Glu Pro Ala Ile Tyr Glu Val Arg Lys Gln						
	885			890		895
Phe Met Arg Glu Met Ser Ser Leu Ser Ser Glu Gly Glu Gly Gln Asn						
	900			905		910
Arg Pro Val Leu Lys Arg Tyr Thr Ser Ser Leu Glu Lys Glu Val Pro						
	915			920		925
Ala Thr Gln Thr Lys Glu Thr Gly Ala Leu Ile Lys Glu Glu Ile Ala						



1235	1240	1245
Ile Ile Ala Val Glu Arg Val Lys Glu Tyr Ser Lys Thr Glu Thr Glu		
1250	1255	1260
Ala Pro Trp Val Leu Glu Ser Asn Arg Ala Pro Glu Gly Trp Pro Arg		
1265	1270	1275 1280
Ser Gly Val Val Glu Phe Arg Asn Tyr Ser Val Arg Tyr Arg Pro Gly		
1285	1290	1295
Leu Glu Leu Val Leu Lys Asn Leu Thr Leu His Val Gln Gly Gly Glu		
1300	1305	1310
Lys Val Gly Ile Val Gly Arg Thr Gly Ala Gly Lys Ser Ser Met Thr		
1315	1320	1325
Leu Cys Leu Phe Arg Ile Leu Glu Ala Ala Glu Gly Glu Ile Phe Ile		
1330	1335	1340
Asp Gly Leu Asn Val Ala His Ile Gly Leu His Asp Leu Arg Ser Gln		
1345	1350	1355 1360
Leu Thr Ile Ile Pro Gln Asp Pro Ile Leu Phe Ser Gly Thr Leu Arg		
1365	1370	1375
Met Asn Leu Asp Pro Phe Gly Arg Tyr Ser Asp Glu Asp Ile Trp Arg		
1380	1385	1390
Thr Leu Glu Leu Ser His Leu Ser Ala Phe Val Ser Ser Gln Pro Thr		
1395	1400	1405
Gly Leu Asp Phe Gln Cys Ser Glu Gly Gly Asp Asn Leu Ser Val Gly		
1410	1415	1420
Gln Arg Gln Leu Val Cys Leu Ala Arg Ala Leu Leu Arg Lys Ser Arg		
1425	1430	1435 1440
Val Leu Val Leu Asp Glu Ala Thr Ala Ala Ile Asp Leu Glu Thr Asp		
1445	1450	1455
Asp Leu Ile Gln Gly Thr Ile Arg Thr Gln Phe Glu Asp Cys Thr Val		
1460	1465	1470
Leu Thr Ile Ala His Arg Leu Asn Thr Ile Met Asp Tyr Asn Arg Val		
1475	1480	1485
Leu Val Leu Asp Lys Gly Val Val Ala Glu Phe Asp Ser Pro Val Asn		
1490	1495	1500
Leu Ile Ala Ala Gly Gly Ile Phe Tyr Gly Met Ala Lys Asp Ala Gly		
1505	1510	1515 1520
Leu Ala		

<210> 86  
 <211> 1531  
 <212> PRT  
 <213> Homo sapiens

<400> 86

Met	Ala	Leu	Arg	Gly	Phe	Cys	Ser	Ala	Asp	Gly	Ser	Asp	Pro	Leu	Trp
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Asp	Trp	Asn	Val	Thr	Trp	Asn	Thr	Ser	Asn	Pro	Asp	Phe	Thr	Lys	Cys
		20					25						30		
Phe	Gln	Asn	Thr	Val	Leu	Val	Trp	Val	Pro	Cys	Phe	Tyr	Leu	Trp	Ala
		35					40					45			
Cys	Phe	Pro	Phe	Tyr	Phe	Leu	Tyr	Leu	Ser	Arg	His	Asp	Arg	Gly	Tyr
	50					55					60				
Ile	Gln	Met	Thr	Pro	Leu	Asn	Lys	Thr	Lys	Thr	Ala	Leu	Gly	Phe	Leu
65					70					75					80
Leu	Trp	Ile	Val	Cys	Trp	Ala	Asp	Leu	Phe	Tyr	Ser	Phe	Trp	Glu	Arg
			85						90					95	
Ser	Arg	Gly	Ile	Phe	Leu	Ala	Pro	Val	Phe	Leu	Val	Ser	Pro	Thr	Leu
		100						105					110		
Leu	Gly	Ile	Thr	Thr	Leu	Leu	Ala	Thr	Phe	Leu	Ile	Gln	Leu	Glu	Arg
	115						120					125			
Arg	Lys	Gly	Val	Gln	Ser	Ser	Gly	Ile	Met	Leu	Thr	Phe	Trp	Leu	Val
	130					135					140				
Ala	Leu	Val	Cys	Ala	Leu	Ala	Ile	Leu	Arg	Ser	Lys	Ile	Met	Thr	Ala
145					150				155						160
Leu	Lys	Glu	Asp	Ala	Gln	Val	Asp	Leu	Phe	Arg	Asp	Ile	Thr	Phe	Tyr
			165						170					175	
Val	Tyr	Phe	Ser	Leu	Leu	Leu	Ile	Gln	Leu	Val	Leu	Ser	Cys	Phe	Ser
		180						185					190		
Asp	Arg	Ser	Pro	Leu	Phe	Ser	Glu	Thr	Ile	His	Asp	Pro	Asn	Pro	Cys
		195					200					205			
Pro	Glu	Ser	Ser	Ala	Ser	Phe	Leu	Ser	Arg	Ile	Thr	Phe	Trp	Trp	Ile
	210					215					220				
Thr	Gly	Leu	Ile	Val	Arg	Gly	Tyr	Arg	Gln	Pro	Leu	Glu	Gly	Ser	Asp
225					230					235					240
Leu	Trp	Ser	Leu	Asn	Lys	Glu	Asp	Thr	Ser	Glu	Gln	Val	Val	Pro	Val
			245						250					255	
Leu	Val	Lys	Asn	Trp	Lys	Lys	Glu	Cys	Ala	Lys	Thr	Arg	Lys	Gln	Pro
			260					265						270	

Val Lys Val Val Tyr Ser Ser Lys Asp Pro Ala Gln Pro Lys Glu Ser  
 275 280 285  
 Ser Lys Val Asp Ala Asn Glu Glu Val Glu Ala Leu Ile Val Lys Ser  
 290 295 300  
 Pro Gln Lys Glu Trp Asn Pro Ser Leu Phe Lys Val Leu Tyr Lys Thr  
 305 310 315 320  
 Phe Gly Pro Tyr Phe Leu Met Ser Phe Phe Phe Lys Ala Ile His Asp  
 325 330 335  
 Leu Met Met Phe Ser Gly Pro Gln Ile Leu Lys Leu Leu Ile Lys Phe  
 340 345 350  
 Val Asn Asp Thr Lys Ala Pro Asp Trp Gln Gly Tyr Phe Tyr Thr Val  
 355 360 365  
 Leu Leu Phe Val Thr Ala Cys Leu Gln Thr Leu Val Leu His Gln Tyr  
 370 375 380  
 Phe His Ile Cys Phe Val Ser Gly Met Arg Ile Lys Thr Ala Val Ile  
 385 390 395 400  
 Gly Ala Val Tyr Arg Lys Ala Leu Val Ile Thr Asn Ser Ala Arg Lys  
 405 410 415  
 Ser Ser Thr Val Gly Glu Ile Val Asn Leu Met Ser Val Asp Ala Gln  
 420 425 430  
 Arg Phe Met Asp Leu Ala Thr Tyr Ile Asn Met Ile Trp Ser Ala Pro  
 435 440 445  
 Leu Gln Val Ile Leu Ala Leu Tyr Leu Leu Trp Leu Asn Leu Gly Pro  
 450 455 460  
 Ser Val Leu Ala Gly Val Ala Val Met Val Leu Met Val Pro Val Asn  
 465 470 475 480  
 Ala Val Met Ala Met Lys Thr Lys Thr Tyr Gln Val Ala His Met Lys  
 485 490 495  
 Ser Lys Asp Asn Arg Ile Lys Leu Met Asn Glu Ile Leu Asn Gly Ile  
 500 505 510  
 Lys Val Leu Lys Leu Tyr Ala Trp Glu Leu Ala Phe Lys Asp Lys Val  
 515 520 525  
 Leu Ala Ile Arg Gln Glu Glu Leu Lys Val Leu Lys Lys Ser Ala Tyr  
 530 535 540  
 Leu Ser Ala Val Gly Thr Phe Thr Trp Val Cys Thr Pro Phe Leu Val  
 545 550 555 560  
 Ala Leu Cys Thr Phe Ala Val Tyr Val Thr Ile Asp Glu Asn Asn Ile  
 565 570 575

Leu	Asp	Ala	Gln	Thr	Ala	Phe	Val	Ser	Leu	Ala	Leu	Phe	Asn	Ile	Leu	
			580					585					590			
Arg	Phe	Pro	Leu	Asn	Ile	Leu	Pro	Met	Val	Ile	Ser	Ser	Ile	Val	Gln	
		595					600					605				
Ala	Ser	Val	Ser	Leu	Lys	Arg	Leu	Arg	Ile	Phe	Leu	Ser	His	Glu	Glu	
	610					615					620					
Leu	Glu	Pro	Asp	Ser	Ile	Glu	Arg	Arg	Pro	Val	Lys	Asp	Gly	Gly	Gly	
625					630					635					640	
Thr	Asn	Ser	Ile	Thr	Val	Arg	Asn	Ala	Thr	Phe	Thr	Trp	Ala	Arg	Ser	
			645						650					655		
Asp	Pro	Pro	Thr	Leu	Asn	Gly	Ile	Thr	Phe	Ser	Ile	Pro	Glu	Gly	Ala	
			660					665					670			
Leu	Val	Ala	Val	Val	Gly	Gln	Val	Gly	Cys	Gly	Lys	Ser	Ser	Leu	Leu	
	675						680					685				
Ser	Ala	Leu	Leu	Ala	Glu	Met	Asp	Lys	Val	Glu	Gly	His	Val	Ala	Ile	
	690					695					700					
Lys	Gly	Ser	Val	Ala	Tyr	Val	Pro	Gln	Gln	Ala	Trp	Ile	Gln	Asn	Asp	
705					710					715					720	
Ser	Leu	Arg	Glu	Asn	Ile	Leu	Phe	Gly	Cys	Gln	Leu	Glu	Glu	Pro	Tyr	
			725					730						735		
Tyr	Arg	Ser	Val	Ile	Gln	Ala	Cys	Ala	Leu	Leu	Pro	Asp	Leu	Glu	Ile	
			740				745						750			
Leu	Pro	Ser	Gly	Asp	Arg	Thr	Glu	Ile	Gly	Glu	Lys	Gly	Val	Asn	Leu	
	755						760					765				
Ser	Gly	Gly	Gln	Lys	Gln	Arg	Val	Ser	Leu	Ala	Arg	Ala	Val	Tyr	Ser	
	770					775					780					
Asn	Ala	Asp	Ile	Tyr	Leu	Phe	Asp	Asp	Pro	Leu	Ser	Ala	Val	Asp	Ala	
785					790					795				800		
His	Val	Gly	Lys	His	Ile	Phe	Glu	Asn	Val	Ile	Gly	Pro	Lys	Gly	Met	
			805					810						815		
Leu	Lys	Asn	Lys	Thr	Arg	Ile	Leu	Val	Thr	His	Ser	Met	Ser	Tyr	Leu	
		820						825					830			
Pro	Gln	Val	Asp	Val	Ile	Ile	Val	Met	Ser	Gly	Gly	Lys	Ile	Ser	Glu	
	835						840					845				
Met	Gly	Ser	Tyr	Gln	Glu	Leu	Leu	Ala	Arg	Asp	Gly	Ala	Phe	Ala	Glu	
	850					855					860					
Phe	Leu	Arg	Thr	Tyr	Ala	Ser	Thr	Glu	Gln	Glu	Gln	Asp	Ala	Glu	Glu	
865					870					875				880		

Asn Gly Val Thr Gly Val Ser Gly Pro Gly Lys Glu Ala Lys Gln Met  
 885 890 895  
 Glu Asn Gly Met Leu Val Thr Asp Ser Ala Gly Lys Gln Leu Gln Arg  
 900 905 910  
 Gln Leu Ser Ser Ser Ser Tyr Ser Gly Asp Ile Ser Arg His His  
 915 920 925  
 Asn Ser Thr Ala Glu Leu Gln Lys Ala Glu Ala Lys Lys Glu Glu Thr  
 930 935 940  
 Trp Lys Leu Met Glu Ala Asp Lys Ala Gln Thr Gly Gln Val Lys Leu  
 945 950 955 960  
 Ser Val Tyr Trp Asp Tyr Met Lys Ala Ile Gly Leu Phe Ile Ser Phe  
 965 970 975  
 Leu Ser Ile Phe Leu Phe Met Cys Asn His Val Ser Ala Leu Ala Ser  
 980 985 990  
 Asn Tyr Trp Leu Ser Leu Trp Thr Asp Asp Pro Ile Val Asn Gly Thr  
 995 1000 1005  
 Gln Glu His Thr Lys Val Arg Leu Ser Val Tyr Gly Ala Leu Gly Ile  
 1010 1015 1020  
 Ser Gln Gly Ile Ala Val Phe Gly Tyr Ser Met Ala Val Ser Ile Gly  
 1025 1030 1035 1040  
 Gly Ile Leu Ala Ser Arg Cys Leu His Val Asp Leu Leu His Ser Ile  
 1045 1050 1055  
 Leu Arg Ser Pro Met Ser Phe Phe Glu Arg Thr Pro Ser Gly Asn Leu  
 1060 1065 1070  
 Val Asn Arg Phe Ser Lys Glu Leu Asp Thr Val Asp Ser Met Ile Pro  
 1075 1080 1085  
 Glu Val Ile Lys Met Phe Met Gly Ser Leu Phe Asn Val Ile Gly Ala  
 1090 1095 1100  
 Cys Ile Val Ile Leu Leu Ala Thr Pro Ile Ala Ala Ile Ile Ile Pro  
 1105 1110 1115 1120  
 Pro Leu Gly Leu Ile Tyr Phe Phe Val Gln Arg Phe Tyr Val Ala Ser  
 1125 1130 1135  
 Ser Arg Gln Leu Lys Arg Leu Glu Ser Val Ser Arg Ser Pro Val Tyr  
 1140 1145 1150  
 Ser His Phe Asn Glu Thr Leu Leu Gly Val Ser Val Ile Arg Ala Phe  
 1155 1160 1165  
 Glu Glu Gln Glu Arg Phe Ile His Gln Ser Asp Leu Lys Val Asp Glu  
 1170 1175 1180

Asn Gln Lys Ala Tyr Tyr Pro Ser Ile Val Ala Asn Arg Trp Leu Ala  
 1185 1190 1195 1200  
 Val Arg Leu Glu Cys Val Gly Asn Cys Ile Val Leu Phe Ala Ala Leu  
 1205 1210 1215  
 Phe Ala Val Ile Ser Arg His Ser Leu Ser Ala Gly Leu Val Gly Leu  
 1220 1225 1230  
 Ser Val Ser Tyr Ser Leu Gln Val Thr Thr Tyr Leu Asn Trp Leu Val  
 1235 1240 1245  
 Arg Met Ser Ser Glu Met Glu Thr Asn Ile Val Ala Val Glu Arg Leu  
 1250 1255 1260  
 Lys Glu Tyr Ser Glu Thr Glu Lys Glu Ala Pro Trp Gln Ile Gln Glu  
 1265 1270 1275 1280  
 Thr Ala Pro Pro Ser Ser Trp Pro Gln Val Gly Arg Val Glu Phe Arg  
 1285 1290 1295  
 Asn Tyr Cys Leu Arg Tyr Arg Glu Asp Leu Asp Phe Val Leu Arg His  
 1300 1305 1310  
 Ile Asn Val Thr Ile Asn Gly Gly Glu Lys Val Gly Ile Val Gly Arg  
 1315 1320 1325  
 Thr Gly Ala Gly Lys Ser Ser Leu Thr Leu Gly Leu Phe Arg Ile Asn  
 1330 1335 1340  
 Glu Ser Ala Glu Gly Glu Ile Ile Ile Asp Gly Ile Asn Ile Ala Lys  
 1345 1350 1355 1360  
 Ile Gly Leu His Asp Leu Arg Phe Lys Ile Thr Ile Ile Pro Gln Asp  
 1365 1370 1375  
 Pro Val Leu Phe Ser Gly Ser Leu Arg Met Asn Leu Asp Pro Phe Ser  
 1380 1385 1390  
 Gln Tyr Ser Asp Glu Glu Val Trp Thr Ser Leu Glu Leu Ala His Leu  
 1395 1400 1405  
 Lys Asp Phe Val Ser Ala Leu Pro Asp Lys Leu Asp His Glu Cys Ala  
 1410 1415 1420  
 Glu Gly Gly Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu  
 1425 1430 1435 1440  
 Ala Arg Ala Leu Leu Arg Lys Thr Lys Ile Leu Val Leu Asp Glu Ala  
 1445 1450 1455  
 Thr Ala Ala Val Asp Leu Glu Thr Asp Asp Leu Ile Gln Ser Thr Ile  
 1460 1465 1470  
 Arg Thr Gln Phe Glu Asp Cys Thr Val Leu Thr Ile Ala His Arg Leu  
 1475 1480 1485



Asn Thr Ile Met Asp Tyr Thr Arg Val Ile Val Leu Asp Lys Gly Glu  
 1490 1495 1500

Ile Gln Glu Tyr Gly Ala Pro Ser Asp Leu Leu Gln Gln Arg Gly Leu  
 1505 1510 1515 1520

Phe Tyr Ser Met Ala Lys Asp Ala Gly Leu Val  
 1525 1530

<210> 87

<211> 1515

<212> PRT

<213> Homo sapiens

<400> 87

Asp Trp Asn Val Thr Trp Asn Thr Ser Asn Pro Asp Phe Thr Lys Cys  
 1 5 10 15

Phe Gln Asn Thr Val Leu Val Trp Val Pro Cys Phe Tyr Leu Trp Ala  
 20 25 30

Cys Phe Pro Phe Tyr Phe Leu Tyr Leu Ser Arg His Asp Arg Gly Tyr  
 35 40 45

Ile Gln Met Thr Pro Leu Asn Lys Thr Lys Thr Ala Leu Gly Phe Leu  
 50 55 60

Leu Trp Ile Val Cys Trp Ala Asp Leu Phe Tyr Ser Phe Trp Glu Arg  
 65 70 75 80

Ser Arg Gly Ile Phe Leu Ala Pro Val Phe Leu Val Ser Pro Thr Leu  
 85 90 95

Leu Gly Ile Thr Thr Leu Leu Ala Thr Phe Leu Ile Gln Leu Glu Arg  
 100 105 110

Arg Lys Gly Val Gln Ser Ser Gly Ile Met Leu Thr Phe Trp Leu Val  
 115 120 125

Ala Leu Val Cys Ala Leu Ala Ile Leu Arg Ser Lys Ile Met Thr Ala  
 130 135 140

Leu Lys Glu Asp Ala Gln Val Asp Leu Phe Arg Asp Ile Thr Phe Tyr  
 145 150 155 160

Val Tyr Phe Ser Leu Leu Leu Ile Gln Leu Val Leu Ser Cys Phe Ser  
 165 170 175

Asp Arg Ser Pro Leu Phe Ser Glu Thr Ile His Asp Pro Asn Pro Cys  
 180 185 190

Pro Glu Ser Ser Ala Ser Phe Leu Ser Arg Ile Thr Phe Trp Trp Ile  
 195 200 205

Thr Gly Leu Ile Val Arg Gly Tyr Arg Gln Pro Leu Glu Gly Ser Asp  
 210 215 220

Leu Trp Ser Leu Asn Lys Glu Asp Thr Ser Glu Gln Val Val Pro Val  
 225 230 235 240  
 Leu Val Lys Asn Trp Lys Lys Glu Cys Ala Lys Thr Arg Lys Gln Pro  
 245 250 255  
 Val Lys Val Val Tyr Ser Ser Lys Asp Pro Ala Gln Pro Lys Glu Ser  
 260 265 270  
 Ser Lys Val Asp Ala Asn Glu Glu Val Glu Ala Leu Ile Val Lys Ser  
 275 280 285  
 Pro Gln Lys Glu Trp Asn Pro Ser Leu Phe Lys Val Leu Tyr Lys Thr  
 290 295 300  
 Phe Gly Pro Tyr Phe Leu Met Ser Phe Phe Phe Lys Ala Ile His Asp  
 305 310 315 320  
 Leu Met Met Phe Ser Gly Pro Gln Ile Leu Lys Leu Leu Ile Lys Phe  
 325 330 335  
 Val Asn Asp Thr Lys Ala Pro Asp Trp Gln Gly Tyr Phe Tyr Thr Val  
 340 345 350  
 Leu Leu Phe Val Thr Ala Cys Leu Gln Thr Leu Val Leu His Gln Tyr  
 355 360 365  
 Phe His Ile Cys Phe Val Ser Gly Met Arg Ile Lys Thr Ala Val Ile  
 370 375 380  
 Gly Ala Val Tyr Arg Lys Ala Leu Val Ile Thr Asn Ser Ala Arg Lys  
 385 390 395 400  
 Ser Ser Thr Val Gly Glu Ile Val Asn Leu Met Ser Val Asp Ala Gln  
 405 410 415  
 Arg Phe Met Asp Leu Ala Thr Tyr Ile Asn Met Ile Trp Ser Ala Pro  
 420 425 430  
 Leu Gln Val Ile Leu Ala Leu Tyr Leu Leu Trp Leu Asn Leu Gly Pro  
 435 440 445  
 Ser Val Leu Ala Gly Val Ala Val Met Val Leu Met Val Pro Val Asn  
 450 455 460  
 Ala Val Met Ala Met Lys Thr Lys Thr Tyr Gln Val Ala His Met Lys  
 465 470 475 480  
 Ser Lys Asp Asn Arg Ile Lys Leu Met Asn Glu Ile Leu Asn Gly Ile  
 485 490 495  
 Lys Val Leu Lys Leu Tyr Ala Trp Glu Leu Ala Phe Lys Asp Lys Val  
 500 505 510  
 Leu Ala Ile Arg Gln Glu Glu Leu Lys Val Leu Lys Lys Ser Ala Tyr  
 515 520 525

Leu Ser Ala Val Gly Thr Phe Thr Trp Val Cys Thr Pro Phe Leu Val  
 530 535 540  
 Ala Leu Cys Thr Phe Ala Val Tyr Val Thr Ile Asp Glu Asn Asn Ile  
 545 550 555 560  
 Leu Asp Ala Gln Thr Ala Phe Val Ser Leu Ala Leu Phe Asn Ile Leu  
 565 570 575  
 Arg Phe Pro Leu Asn Ile Leu Pro Met Val Ile Ser Ser Ile Val Gln  
 580 585 590  
 Ala Ser Val Ser Leu Lys Arg Leu Arg Ile Phe Leu Ser His Glu Glu  
 595 600 605  
 Leu Glu Pro Asp Ser Ile Glu Arg Arg Pro Val Lys Asp Gly Gly Gly  
 610 615 620  
 Thr Asn Ser Ile Thr Val Arg Asn Ala Thr Phe Thr Trp Ala Arg Ser  
 625 630 635 640  
 Asp Pro Pro Thr Leu Asn Gly Ile Thr Phe Ser Ile Pro Glu Gly Ala  
 645 650 655  
 Leu Val Ala Val Val Gly Gln Val Gly Cys Gly Lys Ser Ser Leu Leu  
 660 665 670  
 Ser Ala Leu Leu Ala Glu Met Asp Lys Val Glu Gly His Val Ala Ile  
 675 680 685  
 Lys Gly Ser Val Ala Tyr Val Pro Gln Gln Ala Trp Ile Gln Asn Asp  
 690 695 700  
 Ser Leu Arg Glu Asn Ile Leu Phe Gly Cys Gln Leu Glu Glu Pro Tyr  
 705 710 715 720  
 Tyr Arg Ser Val Ile Gln Ala Cys Ala Leu Leu Pro Asp Leu Glu Ile  
 725 730 735  
 Leu Pro Ser Gly Asp Arg Thr Glu Ile Gly Glu Lys Gly Val Asn Leu  
 740 745 750  
 Ser Gly Gly Gln Lys Gln Arg Val Ser Leu Ala Arg Ala Val Tyr Ser  
 755 760 765  
 Asn Ala Asp Ile Tyr Leu Phe Asp Asp Pro Leu Ser Ala Val Asp Ala  
 770 775 780  
 His Val Gly Lys His Ile Phe Glu Asn Val Ile Gly Pro Lys Gly Met  
 785 790 795 800  
 Leu Lys Asn Lys Thr Arg Ile Leu Val Thr His Ser Met Ser Tyr Leu  
 805 810 815  
 Pro Gln Val Asp Val Ile Ile Val Met Ser Gly Gly Lys Ile Ser Glu  
 820 825 830

Met Gly Ser Tyr Gln Glu Leu Leu Ala Arg Asp Gly Ala Phe Ala Glu  
 835 840 845  
 Phe Leu Arg Thr Tyr Ala Ser Thr Glu Gln Glu Gln Asp Ala Glu Glu  
 850 855 860  
 Asn Gly Val Thr Gly Val Ser Gly Pro Gly Lys Glu Ala Lys Gln Met  
 865 870 875 880  
 Glu Asn Gly Met Leu Val Thr Asp Ser Ala Gly Lys Gln Leu Gln Arg  
 885 890 895  
 Gln Leu Ser Ser Ser Ser Ser Tyr Ser Gly Asp Ile Ser Arg His His  
 900 905 910  
 Asn Ser Thr Ala Glu Leu Gln Lys Ala Glu Ala Lys Lys Glu Glu Thr  
 915 920 925  
 Trp Lys Leu Met Glu Ala Asp Lys Ala Gln Thr Gly Gln Val Lys Leu  
 930 935 940  
 Ser Val Tyr Trp Asp Tyr Met Lys Ala Ile Gly Leu Phe Ile Ser Phe  
 945 950 955 960  
 Leu Ser Ile Phe Leu Phe Met Cys Asn His Val Ser Ala Leu Ala Ser  
 965 970 975  
 Asn Tyr Trp Leu Ser Leu Trp Thr Asp Asp Pro Ile Val Asn Gly Thr  
 980 985 990  
 Gln Glu His Thr Lys Val Arg Leu Ser Val Tyr Gly Ala Leu Gly Ile  
 995 1000 1005  
 Ser Gln Gly Ile Ala Val Phe Gly Tyr Ser Met Ala Val Ser Ile Gly  
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 Gly Ile Leu Ala Ser Arg Cys Leu His Val Asp Leu Leu His Ser Ile  
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 Leu Arg Ser Pro Met Ser Phe Phe Glu Arg Thr Pro Ser Gly Asn Leu  
 1045 1050 1055  
 Val Asn Arg Phe Ser Lys Glu Leu Asp Thr Val Asp Ser Met Ile Pro  
 1060 1065 1070  
 Glu Val Ile Lys Met Phe Met Gly Ser Leu Phe Asn Val Ile Gly Ala  
 1075 1080 1085  
 Cys Ile Val Ile Leu Leu Ala Thr Pro Ile Ala Ala Ile Ile Ile Pro  
 1090 1095 1100  
 Pro Leu Gly Leu Ile Tyr Phe Phe Val Gln Arg Phe Tyr Val Ala Ser  
 1105 1110 1115 1120  
 Ser Arg Gln Leu Lys Arg Leu Glu Ser Val Ser Arg Ser Pro Val Tyr  
 1125 1130 1135

Ser His Phe Asn Glu Thr Leu Leu Gly Val Ser Val Ile Arg Ala Phe  
 1140 1145 1150  
 Glu Glu Gln Glu Arg Phe Ile His Gln Ser Asp Leu Lys Val Asp Glu  
 1155 1160 1165  
 Asn Gln Lys Ala Tyr Tyr Pro Ser Ile Val Ala Asn Arg Trp Leu Ala  
 1170 1175 1180  
 Val Arg Leu Glu Cys Val Gly Asn Cys Ile Val Leu Phe Ala Ala Leu  
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 Phe Ala Val Ile Ser Arg His Ser Leu Ser Ala Gly Leu Val Gly Leu  
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 Ser Val Ser Tyr Ser Leu Gln Val Thr Thr Tyr Leu Asn Trp Leu Val  
 1220 1225 1230  
 Arg Met Ser Ser Glu Met Glu Thr Asn Ile Val Ala Val Glu Arg Leu  
 1235 1240 1245  
 Lys Glu Tyr Ser Glu Thr Glu Lys Glu Ala Pro Trp Gln Ile Gln Glu  
 1250 1255 1260  
 Thr Ala Pro Pro Ser Ser Trp Pro Gln Val Gly Arg Val Glu Phe Arg  
 1265 1270 1275 1280  
 Asn Tyr Cys Leu Arg Tyr Arg Glu Asp Leu Asp Phe Val Leu Arg His  
 1285 1290 1295  
 Ile Asn Val Thr Ile Asn Gly Gly Glu Lys Val Gly Ile Val Gly Arg  
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 Glu Ser Ala Glu Gly Glu Ile Ile Ile Asp Gly Ile Asn Ile Ala Lys  
 1330 1335 1340  
 Ile Gly Leu His Asp Leu Arg Phe Lys Ile Thr Ile Ile Pro Gln Asp  
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 1365 1370 1375  
 Gln Tyr Ser Asp Glu Glu Val Trp Thr Ser Leu Glu Leu Ala His Leu  
 1380 1385 1390  
 Lys Asp Phe Val Ser Ala Leu Pro Asp Lys Leu Asp His Glu Cys Ala  
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 Glu Gly Gly Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu  
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 Ala Arg Ala Leu Leu Arg Lys Thr Lys Ile Leu Val Leu Asp Glu Ala  
 1425 1430 1435 1440

Thr Ala Ala Val Asp Leu Glu Thr Asp Asp Leu Ile Gln Ser Thr Ile  
1445 1450 1455

Arg Thr Gln Phe Glu Asp Cys Thr Val Leu Thr Ile Ala His Arg Leu  
1460 1465 1470

Asn Thr Ile Met Asp Tyr Thr Arg Val Ile Val Leu Asp Lys Gly Glu  
1475 1480 1485

Ile Gln Glu Tyr Gly Ala Pro Ser Asp Leu Leu Gln Gln Arg Gly Leu  
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<210> 88

<211> 1528

<212> PRT

<213> Mus musculus

<400> 88

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Phe Gln Asn Thr Val Leu Thr Trp Val Pro Cys Phe Tyr Leu Trp Ser  
35 40 45

Cys Phe Pro Leu Tyr Phe Phe Tyr Leu Ser Arg His Asp Arg Gly Tyr  
50 55 60

Ile Gln Met Thr His Leu Asn Lys Thr Lys Thr Ala Leu Gly Phe Phe  
65 70 75 80

Leu Trp Ile Ile Cys Trp Ala Asp Leu Phe Tyr Ser Phe Trp Glu Arg  
85 90 95

Ser Gln Gly Val Leu Arg Ala Pro Val Leu Leu Val Ser Pro Thr Leu  
100 105 110

Leu Gly Ile Thr Met Leu Leu Ala Thr Phe Leu Ile Gln Leu Glu Arg  
115 120 125

Arg Lys Gly Val Gln Ser Ser Gly Ile Met Leu Thr Phe Trp Leu Val  
130 135 140

Ala Leu Leu Cys Ala Leu Ala Ile Leu Arg Ser Lys Ile Ile Ser Ala  
145 150 155 160

Leu Lys Lys Asp Ala His Val Asp Val Phe Arg Asp Ser Thr Phe Tyr  
165 170 175

Leu Tyr Phe Thr Leu Val Leu Val Gln Leu Val Leu Ser Cys Phe Ser

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Asp	Cys	Ser	Pro	Leu	Phe	Ser	Glu	Thr	Val	His	Asp	Arg	Asn	Pro	Cys		
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Pro	Glu	Ser	Ser	Ala	Ser	Phe	Leu	Ser	Arg	Ile	Thr	Phe	Trp	Trp	Ile		
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Thr	Gly	Met	Met	Val	His	Gly	Tyr	Arg	Gln	Pro	Leu	Glu	Ser	Ser	Asp		
225						230						235					
Leu	Trp	Ser	Leu	Asn	Lys	Glu	Asp	Thr	Ser	Glu	Glu	Val	Val	Pro	Val		
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Leu	Val	Asn	Asn	Trp	Lys	Lys	Glu	Cys	Asp	Lys	Ser	Arg	Lys	Gln	Pro		
260						265						270					
Val	Arg	Ile	Val	Tyr	Ala	Pro	Pro	Lys	Asp	Pro	Ser	Lys	Pro	Lys	Gly		
275						280						285					
Ser	Ser	Gln	Leu	Asp	Val	Asn	Glu	Glu	Val	Glu	Ala	Leu	Ile	Val	Lys		
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Ser	Pro	His	Lys	Asp	Arg	Glu	Pro	Ser	Leu	Phe	Lys	Val	Leu	Tyr	Lys		
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Thr	Phe	Gly	Pro	Tyr	Phe	Leu	Met	Ser	Phe	Leu	Tyr	Lys	Ala	Leu	His		
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Asp	Leu	Met	Met	Phe	Ala	Gly	Pro	Lys	Ile	Leu	Glu	Leu	Ile	Ile	Asn		
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Phe	Val	Asn	Asp	Arg	Glu	Ala	Pro	Asp	Trp	Gln	Gly	Tyr	Phe	Tyr	Thr		
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Ala	Leu	Leu	Phe	Val	Ser	Ala	Cys	Leu	Gln	Thr	Leu	Ala	Leu	His	Gln		
370						375						380					
Tyr	Phe	His	Ile	Cys	Phe	Val	Ser	Gly	Met	Arg	Ile	Lys	Thr	Ala	Val		
385						390						395					
Val	Gly	Ala	Val	Tyr	Arg	Lys	Ala	Leu	Leu	Ile	Thr	Asn	Ala	Ala	Arg		
405						410						415					
Lys	Ser	Ser	Thr	Val	Gly	Glu	Ile	Val	Asn	Leu	Met	Ser	Val	Asp	Ala		
420						425						430					
Gln	Arg	Phe	Met	Asp	Leu	Ala	Thr	Tyr	Ile	Asn	Met	Ile	Trp	Ser	Ala		
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Pro	Leu	Gln	Val	Ile	Leu	Ala	Leu	Tyr	Phe	Leu	Trp	Leu	Ser	Leu	Gly		
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Pro	Ser	Val	Leu	Ala	Gly	Val	Ala	Val	Met	Ile	Leu	Met	Val	Pro	Leu		
465						470						475					
Asn	Ala	Val	Met	Ala	Met	Lys	Thr	Lys	Thr	Tyr	Gln	Val	Ala	His	Met		

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Lys	Ser	Lys	Asp 500	Asn	Arg	Ile	Lys	Leu 505	Met	Asn	Glu	Ile	Leu 510	Asn	Gly
Ile	Lys	Val 515	Leu	Lys	Leu	Tyr	Ala 520	Trp	Glu	Leu	Ala	Phe 525	Gln	Asp	Lys
Val 530	Met	Ser	Ile	Arg	Gln	Glu 535	Glu	Leu	Lys	Val	Leu 540	Lys	Lys	Ser	Ala
Tyr 545	Leu	Ala	Ala	Val	Gly 550	Thr	Phe	Thr	Trp	Val 555	Cys	Thr	Pro	Phe	Leu 560
Val	Ala	Leu	Ser	Thr 565	Phe	Ala	Val	Phe	Val 570	Thr	Val	Asp	Glu	Arg 575	Asn
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Leu	Arg	Phe 595	Pro	Leu	Asn	Ile	Leu 600	Pro	Met	Val	Ile	Ser 605	Ser	Ile	Val
Gln 610	Ala	Ser	Val	Ser	Leu	Lys 615	Arg	Leu	Arg	Ile	Phe 620	Leu	Ser	His	Glu
Glu 625	Leu	Glu	Pro	Asp	Ser 630	Ile	Glu	Arg	Arg	Ser 635	Ile	Lys	Ser	Gly	Glu 640
Gly	Asn	Ser	Ile	Thr 645	Val	Lys	Asn	Ala	Thr 650	Phe	Thr	Trp	Ala	Arg 655	Gly
Glu	Pro	Pro	Thr 660	Leu	Asn	Gly	Ile	Thr 665	Phe	Ser	Ile	Pro	Glu 670	Gly	Ala
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Ser 690	Ala	Leu	Leu	Ala	Glu	Met 695	Asp	Lys	Val	Glu	Gly 700	His	Val	Thr	Leu
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Tyr	Lys	Ala 740	Val	Met	Glu	Ala	Cys	Ala 745	Leu	Leu	Pro	Asp	Leu 750	Glu	Ile
Leu	Pro	Ser 755	Gly	Asp	Arg	Thr	Glu 760	Ile	Gly	Glu	Lys	Gly 765	Val	Asn	Leu
Ser 770	Gly	Gly	Gln	Lys	Gln	Arg 775	Val	Ser	Leu	Ala	Arg 780	Ala	Val	Tyr	Ser
Asn	Ser	Asp	Ile	Tyr	Leu	Phe	Asp	Asp	Pro	Leu	Ser	Ala	Val	Asp	Ala



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His Val Gly Lys	His Ile Phe Glu Lys	Val Val Gly Pro Met Gly Leu				
	805	810			815	
Leu Lys Asn Lys	Thr Arg Ile Leu Val Thr	His Gly Ile Ser Tyr Leu				
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Pro Gln Val Asp	Val Ile Ile Val Met Ser	Gly Gly Lys Ile Ser Glu				
	835	840			845	
Met Gly Ser Tyr	Gln Glu Leu Leu Asp Arg	Asp Gly Ala Phe Ala Glu				
	850	855			860	
Phe Leu Arg Thr	Tyr Ala Asn Ala Glu Gln	Asp Leu Ala Ser Glu Asp				
	865	870			875	880
Asp Ser Val Ser	Gly Ser Gly Lys Glu Ser	Lys Pro Val Glu Asn Gly				
	885	890			895	
Met Leu Val Thr	Asp Thr Val Gly Lys His	Leu Gln Arg His Leu Ser				
	900	905			910	
Asn Ser Ser Ser	His Ser Gly Asp Thr Ser	Gln Gln His Ser Ser Ile				
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Ala Glu Leu Gln	Lys Ala Gly Ala Lys Glu	Glu Thr Trp Lys Leu Met				
	930	935			940	
Glu Ala Asp Lys	Ala Gln Thr Gly Gln Val	Gln Leu Ser Val Tyr Trp				
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Asn Tyr Met Lys	Ala Ile Gly Leu Phe Ile	Thr Phe Leu Ser Ile Phe				
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Leu Phe Leu Cys	Asn His Val Ser Ala Leu	Ala Ser Asn Tyr Trp Leu				
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Ser Leu Trp Thr	Asp Asp Pro Pro Val Val	Asn Gly Thr Gln Ala Asn				
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Arg Asn Phe Arg	Leu Ser Val Tyr Gly Ala	Leu Gly Ile Leu Gln Gly				
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Ala Ala Ile Phe	Gly Tyr Ser Met Ala Val	Ser Ile Gly Gly Ile Phe				
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Ala Ser Arg Arg	Leu His Leu Asp Leu Leu	Tyr Asn Val Leu Arg Ser				
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Pro Met Ser Phe	Phe Glu Arg Thr Pro Ser	Gly Asn Leu Val Asn Arg				
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Phe Ser Lys Glu	Leu Asp Thr Val Asp Ser	Met Ile Pro Gln Val Ile				
	1075	1080			1085	
Lys Met Phe Met	Gly Ser Leu Phe Ser Val	Ile Gly Ala Val Ile Ile				

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Leu Val Tyr Phe Phe Val	Gln Arg Phe Tyr Val	Ala Ser Ser Arg Gln
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Asn Glu Thr Leu Leu Gly	Val Ser Val Ile Arg	Ala Phe Glu Glu Gln
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Glu Arg Phe Ile His Gln	Ser Asp Leu Lys Val	Asp Glu Asn Gln Lys
	1170 1175	1180
Ala Tyr Tyr Pro Ser Ile	Val Ala Asn Arg Trp	Leu Ala Val Arg Leu
	1185 1190	1195 1200
Glu Cys Val Gly Asn Cys	Ile Val Leu Phe Ala	Ala Leu Phe Ala Val
	1205 1210	1215
Ile Ser Arg His Ser Leu	Ser Ala Gly Leu Val	Gly Leu Ser Val Ser
	1220 1225	1230
Tyr Ser Leu Gln Ile Thr	Ala Tyr Leu Asn Trp	Leu Val Arg Met Ser
	1235 1240	1245
Ser Glu Met Glu Thr Asn	Ile Val Ala Val Glu	Arg Leu Lys Glu Tyr
	1250 1255	1260
Ser Glu Thr Glu Lys Glu	Ala Pro Trp Gln Ile	Gln Glu Thr Ala Pro
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Pro Ser Thr Trp Pro His	Ser Gly Arg Val Glu	Phe Arg Asp Tyr Cys
	1285 1290	1295
Leu Arg Tyr Arg Glu Asp	Leu Asp Leu Val Leu	Lys His Ile Asn Val
	1300 1305	1310
Thr Ile Glu Gly Gly Glu	Lys Val Gly Ile Val	Gly Arg Thr Gly Ala
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Gly Lys Ser Ser Leu Thr	Leu Gly Leu Phe Arg	Ile Asn Glu Ser Ala
	1330 1335	1340
Glu Gly Glu Ile Ile Ile	Asp Gly Val Asn Ile	Ala Lys Ile Gly Leu
	1345 1350	1355 1360
His Asn Leu Arg Phe Lys	Ile Thr Ile Ile Pro	Gln Asp Pro Val Leu
	1365 1370	1375
Phe Ser Gly Ser Leu Arg	Met Asn Leu Asp Pro	Phe Ser Gln Tyr Ser
	1380 1385	1390
Asp Glu Glu Val Trp Met	Ala Leu Glu Leu Ala	His Leu Lys Gly Phe

1395	1400	1405
Val Ser Ala Leu Pro Asp Lys Leu Asn His Glu Cys Ala Glu Gly Gly		
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Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu Ala Arg Ala		
1425	1430	1435 1440
Leu Leu Arg Lys Thr Lys Ile Leu Val Leu Asp Glu Ala Thr Ala Ala		
	1445	1450 1455
Val Asp Leu Glu Thr Asp Asn Leu Ile Gln Ser Thr Ile Arg Thr Gln		
1460	1465	1470
Phe Glu Asp Cys Thr Val Leu Thr Ile Ala His Arg Leu Asn Thr Ile		
1475	1480	1485
Met Asp Tyr Thr Arg Val Ile Val Leu Asp Lys Gly Glu Val Arg Glu		
1490	1495	1500
Cys Gly Ala Pro Ser Glu Leu Leu Gln Gln Arg Gly Ile Phe Tyr Ser		
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Met Ala Lys Asp Ala Gly Leu Val		
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<210> 89

<211> 1794

<212> DNA

<213> Homo sapiens

<400> 89

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<211> 539

<212> PRT

<213> Homo sapiens

<400> 90

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His Pro Ser Leu Gln Arg Asp Phe Pro Arg Ser Phe Leu Leu Asp Leu  
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Pro Asn Phe Pro Asp Leu Ser Lys Ala Asp Ile Asn Gly Gln Asn Pro  
 65 70 75 80

Asn Ile Gln Val Thr Ile Glu Val Val Asp Gly Pro Asp Ser Glu Ala  
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Asp Lys Asp Gln His Pro Glu Asn Lys Pro Ser Trp Ser Val Pro Ser  
 100 105 110

Pro Asp Trp Arg Ala Trp Trp Gln Arg Ser Leu Ser Leu Ala Arg Ala  
 115 120 125

Asn Ser Gly Asp Gln Asp Tyr Lys Tyr Asp Ser Thr Ser Asp Asp Ser  
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Asn Phe Leu Asn Pro Pro Arg Gly Trp Asp His Thr Ala Pro Gly His  
 145 150 155 160

Arg Thr Phe Glu Thr Lys Asp Gln Pro Glu Tyr Asp Ser Thr Asp Gly  
 165 170 175

Glu Gly Asp Trp Ser Leu Trp Ser Val Cys Ser Val Thr Cys Gly Asn  
 180 185 190

Gly Asn Gln Lys Arg Thr Arg Ser Cys Gly Tyr Ala Cys Thr Ala Thr  
 195 200 205

Glu Ser Arg Thr Cys Asp Arg Pro Asn Cys Pro Ala Cys Thr Gly Phe  
 210 215 220

Leu Ile Val Lys Glu Ala Trp Leu Gly Val Val Val Trp His Val Pro

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Ala Pro Pro Thr Gly	Asn Pro Ser Val	Pro Leu Pro Glu Val	Phe Leu			
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Trp Thr Arg Ala Gln	Leu Arg Met Asn	Ala Gln Gly Ile	Pro Ser Trp			
	260		265		270	
Lys Ser Arg Thr Ser	Pro Leu Ser Val	Met Asn Gly Ser	Trp Trp Ile			
	275		280		285	
Lys Thr Gln Ile Pro	Ile Asn Lys Asn	Lys Ser Gly Leu	Ser Lys Glu			
	290		295		300	
Arg Ile Tyr Ser Lys	Asp Tyr Cys Arg	Glu Ala Arg Asp	Val Ile Ser			
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Leu Leu Leu Gln Trp	Asp Glu Arg Cys	Asp His Lys Ile	Cys Lys His			
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Leu Lys Glu Gln Pro	Gly Val Thr Cys	Ser Leu Lys His	Leu Leu Trp			
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Ala Gly Cys Thr Arg	Gly Glu Arg Val	Ser Leu Trp Pro	Phe Pro Asp			
	355		360		365	
Thr Asp Ser Cys Glu	Arg Trp Met Ser	Phe Lys Ala Arg	Phe Leu Lys			
	370		375		380	
Lys Tyr Met His Lys	Val Met Asn Asp	Leu Pro Ser Cys	Pro Cys Ser			
	385		390		395	400
Tyr Pro Thr Glu Val	Ala Tyr Ser Thr	Ala Asp Ile Phe	Asp Arg Ile			
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Lys Arg Lys Asp Phe	Arg Trp Lys Asp	Ala Ser Gly Pro	Lys Glu Lys			
	420		425		430	
Leu Glu Ile Tyr Lys	Pro Thr Ala Arg	Tyr Cys Ile Arg	Ser Met Leu			
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Ser Leu Glu Ser Thr	Thr Leu Ala Ala	Gln His Cys Cys	Tyr Gly Asp			
	450		455		460	
Asn Met Gln Leu Ile	Thr Arg Gly Lys	Gly Ala Gly Thr	Pro Asn Leu			
	465		470		475	480
Ile Ser Thr Glu Phe	Ser Ala Glu Leu	His Tyr Lys Val	Asp Val Leu			
	485		490		495	
Pro Trp Ile Ile Cys	Lys Gly Asp Trp	Ser Arg Tyr Asn	Glu Ala Arg			
	500		505		510	
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 <211> 1238  
 <212> DNA  
 <213> Homo sapiens

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 agctccacta caaggtggac gtctgacct ggattatctg caaggggtgac tggagcaggt 1140  
 ataacgaggc ccggcctccc aacaacggac aggagtgcac agagagcccc tcggacgagg 1200  
 actacatcaa gcagttccaa gaggccaggg aatattaa 1238

<210> 92  
 <211> 411  
 <212> PRT  
 <213> Homo sapiens

<400> 92  
 Thr Cys Ser Pro Glu Thr Ser Phe Ser Leu Ser Lys Glu Ala Pro Arg  
 1 5 10 15  
 Glu His Leu Asp His Gln Ala Ala His Gln Pro Phe Pro Arg Pro Arg  
 20 25 30  
 Phe Arg Gln Glu Thr Gly His Pro Ser Leu Gln Arg Asp Phe Pro Arg  
 35 40 45  
 Ser Phe Leu Leu Asp Leu Pro Asn Phe Pro Asp Leu Ser Lys Ala Asp  
 50 55 60  
 Ile Asn Gly Gln Asn Pro Asn Ile Gln Val Thr Ile Glu Val Val Asp  
 65 70 75 80  
 Gly Pro Asp Ser Glu Ala Asp Lys Asp Gln His Pro Glu Asn Lys Pro  
 85 90 95  
 Ser Trp Ser Val Pro Ser Pro Asp Trp Arg Ala Trp Trp Gln Arg Ser

100					105					110					
Leu	Ser	Leu	Ala	Arg	Ala	Asn	Ser	Gly	Asp	Gln	Asp	Tyr	Lys	Tyr	Asp
		115					120					125			
Ser	Thr	Ser	Asp	Asp	Ser	Asn	Phe	Leu	Asn	Pro	Pro	Arg	Gly	Trp	Asp
		130					135					140			
His	Thr	Ala	Pro	Gly	His	Arg	Thr	Phe	Glu	Thr	Lys	Asp	Gln	Pro	Glu
		145					150					155			160
Tyr	Asp	Ser	Thr	Asp	Gly	Glu	Gly	Asp	Trp	Ser	Leu	Trp	Ser	Val	Cys
				165					170					175	
Ser	Val	Thr	Cys	Gly	Asn	Gly	Asn	Gln	Lys	Arg	Thr	Arg	Ser	Cys	Gly
			180						185					190	
Tyr	Ala	Cys	Thr	Ala	Thr	Glu	Ser	Arg	Thr	Cys	Asp	Arg	Pro	Asn	Cys
		195					200					205			
Pro	Gly	Ile	Glu	Asp	Thr	Phe	Arg	Thr	Ala	Ala	Thr	Glu	Val	Ser	Leu
		210					215					220			
Leu	Ala	Gly	Ser	Glu	Glu	Phe	Asn	Ala	Thr	Lys	Leu	Phe	Glu	Val	Asp
		225					230					235			240
Thr	Asp	Ser	Cys	Glu	Arg	Trp	Met	Ser	Cys	Lys	Ser	Glu	Phe	Leu	Lys
				245					250					255	
Lys	Tyr	Met	His	Lys	Val	Met	Asn	Asp	Leu	Pro	Ser	Cys	Pro	Cys	Ser
			260					265					270		
Tyr	Pro	Thr	Glu	Val	Ala	Tyr	Ser	Thr	Ala	Asp	Ile	Phe	Asp	Arg	Ile
		275					280					285			
Lys	Arg	Lys	Asp	Phe	Arg	Trp	Lys	Asp	Ala	Ser	Gly	Pro	Lys	Glu	Lys
		290					295					300			
Leu	Glu	Ile	Tyr	Lys	Pro	Thr	Ala	Arg	Tyr	Cys	Ile	Arg	Ser	Met	Leu
		305					310					315			320
Ser	Leu	Glu	Ser	Thr	Thr	Leu	Ala	Ala	Gln	His	Cys	Cys	Tyr	Gly	Asp
				325					330					335	
Asn	Met	Gln	Leu	Ile	Thr	Arg	Gly	Lys	Gly	Ala	Gly	Thr	Pro	Asn	Leu
			340					345					350		
Ile	Gly	Thr	Glu	Phe	Ser	Ala	Glu	Leu	His	Tyr	Lys	Val	Asp	Val	Leu
		355					360					365			
Pro	Trp	Ile	Ile	Cys	Lys	Gly	Asp	Trp	Ser	Arg	Tyr	Asn	Glu	Ala	Arg
		370					375					380			
Pro	Pro	Asn	Asn	Gly	Gln	Glu	Cys	Thr	Glu	Ser	Pro	Ser	Asp	Glu	Asp
		385					390					395			400
Tyr	Ile	Lys	Gln	Phe	Gln	Glu	Ala	Arg	Glu	Tyr					

<210> 93  
 <211> 391  
 <212> PRT  
 <213> Homo sapiens

<400> 93

His	Gln	Ala	Ala	His	Gln	Pro	Phe	Pro	Arg	Pro	Arg	Phe	Arg	Gln	Glu
1				5					10					15	
Thr	Gly	His	Pro	Ser	Leu	Gln	Arg	Asp	Phe	Pro	Arg	Ser	Phe	Leu	Leu
			20					25					30		
Asp	Leu	Pro	Asn	Phe	Pro	Asp	Leu	Ser	Lys	Ala	Asp	Ile	Asn	Gly	Gln
		35					40					45			
Asn	Pro	Asn	Ile	Gln	Val	Thr	Ile	Glu	Val	Val	Asp	Gly	Pro	Asp	Ser
	50					55					60				
Glu	Ala	Asp	Lys	Asp	Gln	His	Pro	Glu	Asn	Lys	Pro	Ser	Trp	Ser	Val
65					70					75					80
Pro	Ser	Pro	Asp	Trp	Arg	Ala	Trp	Trp	Gln	Arg	Ser	Leu	Ser	Leu	Ala
				85					90					95	
Arg	Ala	Asn	Ser	Gly	Asp	Gln	Asp	Tyr	Lys	Tyr	Asp	Ser	Thr	Ser	Asp
			100					105					110		
Asp	Ser	Asn	Phe	Leu	Asn	Pro	Pro	Arg	Gly	Trp	Asp	His	Thr	Ala	Pro
		115					120					125			
Gly	His	Arg	Thr	Phe	Glu	Thr	Lys	Asp	Gln	Pro	Glu	Tyr	Asp	Ser	Thr
	130						135				140				
Asp	Gly	Glu	Gly	Asp	Trp	Ser	Leu	Trp	Ser	Val	Cys	Ser	Val	Thr	Cys
145					150					155					160
Gly	Asn	Gly	Asn	Gln	Lys	Arg	Thr	Arg	Ser	Cys	Gly	Tyr	Ala	Cys	Thr
			165						170					175	
Ala	Thr	Glu	Ser	Arg	Thr	Cys	Asp	Arg	Pro	Asn	Cys	Pro	Gly	Ile	Glu
			180					185					190		
Asp	Thr	Phe	Arg	Thr	Ala	Ala	Thr	Glu	Val	Ser	Leu	Leu	Ala	Gly	Ser
		195					200					205			
Glu	Glu	Phe	Asn	Ala	Thr	Lys	Leu	Phe	Glu	Val	Asp	Thr	Asp	Ser	Cys
	210					215					220				
Glu	Arg	Trp	Met	Ser	Cys	Lys	Ser	Glu	Phe	Leu	Lys	Lys	Tyr	Met	His
225					230					235					240
Lys	Val	Met	Asn	Asp	Leu	Pro	Ser	Cys	Pro	Cys	Ser	Tyr	Pro	Thr	Glu
			245						250					255	



Val Ala Tyr Ser Thr Ala Asp Ile Phe Asp Arg Ile Lys Arg Lys Asp  
 260 265 270  
 Phe Arg Trp Lys Asp Ala Ser Gly Pro Lys Glu Lys Leu Glu Ile Tyr  
 275 280 285  
 Lys Pro Thr Ala Arg Tyr Cys Ile Arg Ser Met Leu Ser Leu Glu Ser  
 290 295 300  
 Thr Thr Leu Ala Ala Gln His Cys Cys Tyr Gly Asp Asn Met Gln Leu  
 305 310 315 320  
 Ile Thr Arg Gly Lys Gly Ala Gly Thr Pro Asn Leu Ile Ser Thr Glu  
 325 330 335  
 Phe Ser Ala Glu Leu His Tyr Lys Val Asp Val Leu Pro Trp Ile Ile  
 340 345 350  
 Cys Lys Gly Asp Trp Ser Arg Tyr Asn Glu Ala Arg Pro Pro Asn Asn  
 355 360 365  
 Gly Gln Lys Cys Thr Glu Ser Pro Ser Asp Glu Asp Tyr Ile Lys Gln  
 370 375 380  
 Phe Gln Glu Ala Arg Glu Tyr  
 385 390

<210> 94

<211> 658

<212> PRT

<213> Homo sapiens

<400> 94

Met Arg Ala Leu Arg Asp Arg Ala Gly Leu Leu Leu Cys Val Leu Leu  
 1 5 10 15  
 Leu Ala Ala Leu Leu Glu Ala Ala Leu Gly Leu Pro Val Lys Lys Pro  
 20 25 30  
 Arg Leu Arg Gly Pro Arg Pro Gly Ser Leu Thr Arg Leu Ala Glu Val  
 35 40 45  
 Ser Gly Gly Gly Thr Gly Leu Arg Ser Ala Leu Ser Val Pro Pro Pro  
 50 55 60  
 Gln Pro Ala Gly Ser Ser Arg Ala Gly Ser Gly Thr Gly Thr His Thr  
 65 70 75 80  
 Gly Ser Asp Pro Pro Met Glu Arg Gly Ala Gly Ala Gly Arg Lys Leu  
 85 90 95  
 Pro Asp Thr Gly Arg Cys Pro Val Thr Glu Gly Ser Thr Val Gln Leu  
 100 105 110  
 Ile Ala Pro Trp Asn Ala Ala Asp Val His Ser His Gly Asp Lys Asp  
 115 120 125

Ser Gln Thr Cys Ile Arg Val Ser Ala Ser Pro Asp Pro Arg Pro Leu  
 130 135 140  
 Lys Glu Glu Glu Glu Ala Pro Leu Leu Pro Arg Thr His Leu Gln Ala  
 145 150 155 160  
 Glu Pro His Gln His Gly Cys Trp Thr Val Thr Glu Pro Ala Ala Met  
 165 170 175  
 Thr Pro Gly Asn Ala Thr Pro Pro Arg Thr Pro Glu Val Thr Pro Leu  
 180 185 190  
 Arg Leu Glu Leu Gln Lys Leu Pro Gly Leu Ala Asn Thr Thr Leu Ser  
 195 200 205  
 Thr Pro Asn Pro Asp Thr Gln Ala Ser Ala Ser Pro Asp Pro Arg Pro  
 210 215 220  
 Leu Arg Glu Glu Glu Glu Ala Arg Leu Leu Pro Arg Thr His Leu Gln  
 225 230 235 240  
 Ala Glu Leu His Gln His Gly Cys Trp Thr Val Thr Glu Pro Ala Ala  
 245 250 255  
 Leu Thr Pro Gly Asn Ala Thr Pro Pro Arg Thr Gln Glu Val Thr Pro  
 260 265 270  
 Leu Leu Leu Glu Leu Gln Lys Leu Pro Glu Leu Val His Ala Thr Leu  
 275 280 285  
 Ser Thr Pro Asn Pro Asp Asn Gln Val Thr Ile Lys Val Val Glu Asp  
 290 295 300  
 Pro Gln Ala Glu Val Ser Ile Asp Leu Leu Ala Glu Pro Ser Asn Pro  
 305 310 315 320  
 Pro Pro Gln Asp Thr Leu Ser Trp Leu Pro Ala Leu Trp Ser Phe Leu  
 325 330 335  
 Trp Gly Asp Tyr Lys Gly Glu Glu Lys Asp Arg Ala Pro Gly Glu Lys  
 340 345 350  
 Gly Glu Glu Lys Glu Glu Asp Glu Asp Tyr Pro Ser Glu Asp Ile Glu  
 355 360 365  
 Gly Glu Asp Gln Glu Asp Lys Glu Glu Asp Glu Glu Glu Gln Ala Leu  
 370 375 380  
 Trp Phe Asn Gly Thr Thr Asp Asn Trp Asp Gln Gly Trp Leu Ala Pro  
 385 390 395 400  
 Gly Asp Trp Val Phe Lys Asp Ser Val Ser Tyr Asp Tyr Glu Pro Gln  
 405 410 415  
 Lys Glu Trp Ser Pro Trp Ser Pro Cys Ser Gly Asn Cys Ser Thr Gly  
 420 425 430

Lys Gln Gln Arg Thr Arg Pro Cys Gly Tyr Gly Cys Thr Ala Thr Glu  
 435 440 445

Thr Arg Thr Cys Asp Leu Pro Ser Cys Pro Gly Thr Glu Asp Lys Asp  
 450 455 460

Thr Leu Gly Leu Pro Ser Glu Glu Trp Lys Leu Leu Ala Arg Asn Ala  
 465 470 475 480

Thr Asp Met His Asp Gln Asp Val Asp Ser Cys Glu Lys Trp Leu Asn  
 485 490 495

Cys Lys Ser Asp Phe Leu Ile Lys Tyr Leu Ser Gln Met Leu Arg Asp  
 500 505 510

Leu Pro Ser Cys Pro Cys Ala Tyr Pro Leu Glu Ala Met Asp Ser Pro  
 515 520 525

Val Ser Leu Gln Asp Glu His Gln Gly Arg Ser Phe Arg Trp Arg Asp  
 530 535 540

Ala Ser Gly Pro Arg Glu Arg Leu Asp Ile Tyr Gln Pro Thr Ala Arg  
 545 550 555 560

Phe Cys Leu Arg Ser Met Leu Ser Gly Glu Ser Ser Thr Leu Ala Ala  
 565 570 575

Gln His Cys Cys Tyr Asp Glu Asp Ser Arg Leu Leu Thr Arg Gly Lys  
 580 585 590

Gly Ala Gly Met Pro Asn Leu Ile Ser Thr Asp Phe Ser Pro Lys Leu  
 595 600 605

His Phe Lys Phe Asp Thr Thr Pro Trp Ile Leu Cys Lys Gly Asp Trp  
 610 615 620

Ser Arg Leu His Ala Val Leu Pro Pro Asn Asn Gly Arg Ala Cys Thr  
 625 630 635 640

Asp Asn Pro Leu Glu Glu Glu Tyr Leu Ala Gln Leu Gln Glu Ala Lys  
 645 650 655

Glu Tyr

<210> 95

<211> 60

<212> PRT

<213> Homo sapiens

<400> 95

Asn Asn Leu Asn Val Gly Ser Asp Thr Thr Ser Glu Thr Ser Phe Ser  
 1 5 10 15

Leu Ser Lys Glu Ala Pro Arg Glu His Leu Asp His Gln Ala Ala His

	20		25		30
Gln Pro Phe Pro Arg Pro Arg Phe Arg Gln Glu Thr Gly His Pro Ser	35	40	45		
Leu Gln Arg Asp Phe Pro Arg Ser Phe Leu Leu Asp	50	55	60		
<210> 96					
<211> 660					
<212> PRT					
<213> Cryptosporidium wrairi					
<400> 96					
Lys Leu Thr His Tyr Ser Val Gly Gly His Ala Ser Thr Ser Arg Val	1	5	10	15	
Lys Gly Arg Ser Ser Ser Gly Ser Ser Ser Gly Asp Phe Lys Val Pro	20	25	30		
Gly Leu Asn Gly Tyr Leu Cys Pro Ser Tyr Asn Arg Asp Pro Arg Gly	35	40	45		
Phe Gly Cys Phe Gly Leu Asn Thr Ala Tyr Thr Val Lys Lys Asn Ser	50	55	60		
Trp Gln Glu Cys Ala Asn Gln Cys Tyr Trp Ser Lys Tyr Thr Ile Tyr	65	70	75	80	
Gly Asn Cys Gln Arg Ser Val Tyr Asn Ser Asn Asn Gln Asp Cys His	85	90	95		
Ile Lys Gly Gly Asp Asn Asp Cys Met Lys Ser Pro Asp Gly Met Ile	100	105	110		
Leu Thr Asn Arg Gln Ser Tyr Met Ile Gly Glu Cys Ala Thr Thr Cys	115	120	125		
Thr Val Ser Ser Trp Ser Ser Trp Thr Pro Cys Ser Gly Val Cys Gly	130	135	140		
Glu Met Arg Ser Arg Thr Arg Ser Val Leu Ser Phe Pro Arg Tyr Asp	145	150	155	160	
His Glu Tyr Cys Pro His Leu Ile Glu Tyr Ser Asn Cys Val Val Gln	165	170	175		
Asn Lys Cys Pro Glu Asn Cys Pro Gln Tyr Gly Val Ser Ile Leu Gly	180	185	190		
Trp Gly Cys Gln Phe Glu Ser Met Phe Ser Phe Asn Lys Asn Leu Phe	195	200	205		
Val Ser Tyr Glu Glu Asp Trp Lys Gly Cys Met Ser Thr Cys Lys Gln	210	215	220		

Asp	Pro	Phe	Cys	Val	Ala	Trp	Ser	Tyr	Asn	Ala	Thr	Leu	Ser	Glu	Gly	225	230	235	240
Pro	Asp	Ser	Val	Gly	Phe	Ser	Arg	Glu	Tyr	Arg	Pro	Cys	Tyr	Thr	His	245	250	255	
Arg	Phe	Ala	Ser	Gly	Cys	Gln	Ala	Leu	Ala	Pro	Gly	Trp	Val	Ser	Gly	260	265	270	
Asn	Lys	Tyr	Thr	Arg	Asp	Val	Asp	Cys	Glu	Thr	Gly	Thr	Cys	Ile	His	275	280	285	
Asn	Glu	Trp	Ser	Ser	Trp	Thr	Thr	Cys	Lys	Asp	Pro	Cys	Ser	Asn	Thr	290	295	300	
Glu	Thr	Met	Ser	Arg	Asn	Arg	Thr	Val	Lys	Ser	Val	Ser	Gln	Asn	Trp	305	310	315	320
Ala	Ser	Thr	Thr	Cys	Arg	Asp	Glu	Ser	Gln	Ile	Gln	Leu	Cys	Ser	Glu	325	330	335	
Asn	Pro	Gln	Ser	Ile	Glu	Thr	Cys	Lys	Thr	Cys	Leu	Val	Gly	Ser	Trp	340	345	350	
Ser	Glu	Trp	Ser	Asp	Cys	Ser	Thr	Ser	Cys	Gly	Glu	Gly	Asn	Arg	Ile	355	360	365	
Arg	Thr	Arg	Glu	Ser	Thr	Lys	Pro	Pro	Leu	Asn	Gly	Asp	Glu	Ser	Thr	370	375	380	
Cys	Pro	Glu	Leu	Ile	Ala	Lys	Glu	Ser	Cys	Asn	Lys	Asp	Val	Glu	Cys	385	390	395	400
Pro	Asn	Ile	Gln	Cys	Glu	Leu	Gly	Glu	Trp	Ser	Ser	Trp	Ser	Pro	Cys	405	410	415	
Ser	Val	Thr	Cys	Gly	Ser	Gly	Thr	Thr	Ser	Arg	Asn	Arg	Glu	Val	Lys	420	425	430	
Gly	Glu	Asn	Cys	Thr	Glu	Leu	Pro	Thr	Glu	Ser	Lys	Lys	Cys	Asn	Leu	435	440	445	
Ala	Asn	Cys	Gly	Asp	Asn	Ser	Ala	Ser	Cys	Thr	Ala	Val	Met	Ser	Val	450	455	460	
Trp	Ser	Glu	Trp	Ser	Ala	Cys	Ser	Glu	Lys	Cys	Asp	Gln	Gly	Leu	Val	465	470	475	480
Arg	Arg	Tyr	Arg	Asp	Phe	Asp	Phe	Ser	Lys	Ile	Gly	Val	Phe	Gly	Tyr	485	490	495	
Val	Pro	Pro	Gly	Lys	Ser	Glu	Glu	Gln	Asn	Lys	Val	Arg	Glu	Ile	Cys	500	505	510	
Lys	Asp	Thr	Pro	Thr	Leu	Glu	Glu	Glu	Pro	Cys	Thr	Ser	Gly	Val	Thr	515	520	525	

Cys Thr Pro Gly Cys Lys Tyr Thr Glu Trp Ser Ala Trp Ser Ser Cys  
 530 535 540  
 Asp Cys Ser Gly Ser Gln Thr Arg Asp Arg Val Val Thr Phe Pro Glu  
 545 550 555 560  
 Gly Ile Ile Asp Ala Ile Cys Gln Ser Ser Lys Asp Thr Arg Ser Cys  
 565 570 575  
 Ser Lys Pro Glu Gly Cys Thr Glu Thr Thr Pro Asp Ser Gly Asp Ala  
 580 585 590  
 Thr Leu Ala Ile Ala Ile Gly Leu Pro Val Gly Ile Leu Gly Leu Cys  
 595 600 605  
 Ile Ile Ala Gly Ser Leu Phe Leu Ile Gly Gly Arg Ser Gly Asn Gln  
 610 615 620  
 Glu Glu Asp Glu Thr Ser Tyr Gln Tyr Phe Asp Gln Pro Ser Ala Ala  
 625 630 635 640  
 Leu Asp Gln Asp Ser Glu Tyr Val Gln Glu Ile Gly Pro Glu Ser Gln  
 645 650 655  
 Asn Trp Ala Ser  
 660

<210> 97  
 <211> 831  
 <212> PRT  
 <213> Homo sapiens

<400> 97  
 Met Gly Leu Ala Trp Gly Leu Gly Val Leu Phe Leu Met His Val Cys  
 1 5 10 15  
 Gly Thr Asn Arg Ile Pro Glu Ser Gly Gly Asp Asn Ser Val Phe Asp  
 20 25 30  
 Ile Phe Glu Leu Thr Gly Ala Ala Arg Lys Gly Ser Gly Arg Arg Leu  
 35 40 45  
 Val Lys Gly Pro Asp Pro Ser Ser Pro Ala Phe Arg Ile Glu Asp Ala  
 50 55 60  
 Asn Leu Ile Pro Pro Val Pro Asp Asp Lys Phe Gln Asp Leu Val Asp  
 65 70 75 80  
 Ala Val Arg Thr Glu Lys Gly Phe Leu Leu Leu Ala Ser Leu Arg Gln  
 85 90 95  
 Met Lys Lys Thr Arg Gly Thr Leu Leu Ala Leu Glu Arg Lys Asp His  
 100 105 110  
 Ser Gly Gln Val Phe Ser Val Val Ser Asn Gly Lys Ala Gly Thr Leu  
 115 120 125

Asp	Leu	Ser	Leu	Thr	Val	Gln	Gly	Lys	Gln	His	Val	Val	Ser	Val	Glu	130	135	140	
Glu	Ala	Leu	Leu	Ala	Thr	Gly	Gln	Trp	Lys	Ser	Ile	Thr	Leu	Phe	Val	145	150	155	160
Gln	Glu	Asp	Arg	Ala	Gln	Leu	Tyr	Ile	Asp	Cys	Glu	Lys	Met	Glu	Asn	165	170	175	
Ala	Glu	Leu	Asp	Val	Pro	Ile	Gln	Ser	Val	Phe	Thr	Arg	Asp	Leu	Ala	180	185	190	
Ser	Ile	Ala	Arg	Leu	Arg	Ile	Ala	Lys	Gly	Gly	Val	Asn	Asp	Asn	Phe	195	200	205	
Gln	Gly	Val	Leu	Gln	Asn	Val	Arg	Phe	Val	Phe	Gly	Thr	Thr	Pro	Glu	210	215	220	
Asp	Ile	Leu	Arg	Asn	Lys	Gly	Cys	Ser	Ser	Ser	Thr	Ser	Val	Leu	Leu	225	230	235	240
Thr	Leu	Asp	Asn	Asn	Val	Val	Asn	Gly	Ser	Ser	Pro	Ala	Ile	Arg	Thr	245	250	255	
Asn	Tyr	Ile	Gly	His	Lys	Thr	Lys	Asp	Leu	Gln	Ala	Ile	Cys	Gly	Ile	260	265	270	
Ser	Cys	Asp	Glu	Leu	Ser	Ser	Met	Val	Leu	Glu	Leu	Arg	Gly	Leu	Arg	275	280	285	
Thr	Ile	Val	Thr	Thr	Leu	Gln	Asp	Ser	Ile	Arg	Lys	Val	Thr	Glu	Glu	290	295	300	
Asn	Lys	Glu	Leu	Ala	Asn	Glu	Leu	Arg	Arg	Pro	Pro	Leu	Cys	Tyr	His	305	310	315	320
Asn	Gly	Val	Gln	Tyr	Arg	Asn	Asn	Glu	Glu	Trp	Thr	Val	Asp	Ser	Cys	325	330	335	
Thr	Glu	Cys	His	Cys	Gln	Asn	Ser	Val	Thr	Ile	Cys	Lys	Lys	Val	Ser	340	345	350	
Cys	Pro	Ile	Met	Pro	Cys	Ser	Asn	Ala	Thr	Val	Pro	Asp	Gly	Glu	Cys	355	360	365	
Cys	Pro	Arg	Cys	Trp	Pro	Ser	Asp	Ser	Ala	Asp	Asp	Gly	Trp	Ser	Pro	370	375	380	
Trp	Ser	Glu	Trp	Thr	Ser	Cys	Ser	Thr	Ser	Cys	Gly	Asn	Gly	Ile	Gln	385	390	395	400
Gln	Arg	Gly	Arg	Ser	Cys	Asp	Ser	Leu	Asn	Asn	Arg	Cys	Glu	Gly	Ser	405	410	415	
Ser	Val	Gln	Thr	Arg	Thr	Cys	His	Ile	Gln	Glu	Cys	Asp	Lys	Arg	Phe	420	425	430	

Lys Gln Asp Gly Gly Trp Ser His Trp Ser Pro Trp Ser Ser Cys Ser  
 435 440 445  
 Val Thr Cys Gly Asp Gly Val Ile Thr Arg Ile Arg Leu Cys Asn Ser  
 450 455 460  
 Pro Ser Pro Gln Met Asn Gly Lys Pro Cys Glu Gly Glu Ala Arg Glu  
 465 470 475 480  
 Thr Lys Ala Cys Lys Lys Asp Ala Cys Pro Ile Asn Gly Gly Trp Gly  
 485 490 495  
 Pro Trp Ser Pro Trp Asp Ile Cys Ser Val Thr Cys Gly Gly Gly Val  
 500 505 510  
 Gln Lys Arg Ser Arg Leu Cys Asn Asn Pro Thr Pro Gln Phe Gly Gly  
 515 520 525  
 Lys Asp Cys Val Gly Asp Val Thr Glu Asn Gln Ile Cys Asn Lys Gln  
 530 535 540  
 Asp Cys Pro Ile Asp Gly Cys Leu Ser Asn Pro Cys Phe Ala Gly Val  
 545 550 555 560  
 Lys Cys Thr Ser Tyr Pro Asp Gly Ser Trp Lys Cys Gly Ala Cys Pro  
 565 570 575  
 Pro Gly Tyr Ser Gly Asn Gly Ile Gln Cys Thr Asp Val Asp Glu Cys  
 580 585 590  
 Lys Glu Val Pro Asp Ala Cys Phe Asn His Asn Gly Glu His Arg Cys  
 595 600 605  
 Glu Asn Thr Asp Pro Gly Tyr Asn Cys Leu Pro Cys Pro Pro Arg Phe  
 610 615 620  
 Thr Gly Ser Gln Pro Phe Gly Gln Gly Val Glu His Ala Thr Ala Asn  
 625 630 635 640  
 Lys Gln Val Cys Lys Pro Arg Asn Pro Cys Thr Asp Gly Thr His Asp  
 645 650 655  
 Cys Asn Lys Asn Ala Lys Cys Asn Tyr Leu Gly His Tyr Ser Asp Pro  
 660 665 670  
 Met Tyr Arg Cys Glu Cys Lys Pro Gly Tyr Ala Gly Asn Gly Ile Ile  
 675 680 685  
 Cys Gly Glu Asp Thr Asp Leu Asp Gly Trp Pro Asn Glu Asn Leu Val  
 690 695 700  
 Cys Val Ala Asn Ala Thr Tyr His Cys Lys Lys Asp Asn Cys Pro Asn  
 705 710 715 720  
 Leu Pro Asn Ser Gly Gln Glu Asp Tyr Asp Lys Asp Gly Ile Gly Asp  
 725 730 735



Ala Cys Asp Asp Asp Asp Asp Asn Asp Lys Ile Pro Asp Asp Arg Asp  
740 745 750

Asn Cys Pro Phe His Tyr Asn Pro Ala Gln Tyr Asp Tyr Asp Arg Asp  
755 760 765

Asp Val Gly Asp Arg Cys Asp Asn Cys Pro Tyr Asn His Asn Pro Asp  
770 775 780

Gln Ala Asp Thr Asp Asn Asn Gly Glu Gly Asp Ala Cys Ala Ala Asp  
785 790 795 800

Ile Asp Gly Asp Gly Ile Leu Asn Glu Arg Asp Asn Cys Gln Tyr Val  
805 810 815

Tyr Asn Val Asp Gln Arg Asp Thr Asp Met Asp Gly Val Gly Asp  
820 825 830

<210> 98  
<211> 831  
<212> PRT  
<213> Mus musculus

<400> 98

Met Glu Leu Leu Arg Gly Leu Gly Val Leu Phe Leu Leu His Met Cys  
1 5 10 15

Gly Ser Asn Arg Ile Pro Glu Ser Gly Gly Asp Asn Gly Val Phe Asp  
20 25 30

Ile Phe Glu Leu Ile Gly Gly Ala Arg Arg Gly Pro Gly Arg Arg Leu  
35 40 45

Val Lys Gly Gln Asp Leu Ser Ser Pro Ala Phe Arg Ile Glu Asn Ala  
50 55 60

Asn Leu Ile Pro Ala Val Pro Asp Asp Lys Phe Gln Asp Leu Leu Asp  
65 70 75 80

Ala Val Trp Ala Asp Lys Gly Phe Ile Phe Leu Ala Ser Leu Arg Gln  
85 90 95

Met Lys Lys Thr Arg Gly Thr Leu Leu Ala Val Glu Arg Lys Asp Asn  
100 105 110

Thr Gly Gln Ile Phe Ser Val Val Ser Asn Gly Lys Ala Gly Thr Leu  
115 120 125

Asp Leu Ser Leu Ser Leu Pro Gly Lys Gln Gln Val Val Ser Val Glu  
130 135 140

Glu Ala Leu Leu Ala Thr Gly Gln Trp Lys Ser Ile Thr Leu Phe Val  
145 150 155 160

Gln Glu Asp Arg Ala Gln Leu Tyr Ile Asp Cys Asp Lys Met Glu Ser

				165				170				175			
Ala	Glu	Leu	Asp 180	Val	Pro	Ile	Gln	Ser 185	Ile	Phe	Thr	Arg	Asp 190	Leu	Ala
Ser	Val	Ala 195	Arg	Leu	Arg	Val	Ala 200	Lys	Gly	Asp	Val	Asn 205	Asp	Asn	Phe
Gln	Gly 210	Val	Leu	Gln	Asn	Val 215	Arg	Phe	Val	Phe	Gly 220	Thr	Thr	Pro	Glu
Asp 225	Ile	Leu	Arg	Asn	Lys 230	Gly	Cys	Ser	Ser	Ser 235	Thr	Asn	Val	Leu	Leu 240
Thr	Leu	Asp	Asn	Asn 245	Val	Val	Asn	Gly	Ser 250	Ser	Pro	Ala	Ile	Arg 255	Thr
Asn	Tyr	Ile	Gly 260	His	Lys	Thr	Lys	Asp 265	Leu	Gln	Ala	Ile	Cys 270	Gly	Leu
Ser	Cys	Asp 275	Glu	Leu	Ser	Ser	Met 280	Val	Leu	Glu	Leu	Lys 285	Gly	Leu	Arg
Thr	Ile 290	Val	Thr	Thr	Leu	Gln 295	Asp	Ser	Ile	Arg	Lys 300	Val	Thr	Glu	Glu
Asn 305	Arg	Glu	Leu	Val	Ser 310	Glu	Leu	Lys	Arg	Pro 315	Pro	Leu	Cys	Phe	His 320
Asn	Gly	Val	Gln 325	Tyr	Lys	Asn	Asn	Glu	Glu 330	Trp	Thr	Val	Asp	Ser 335	Cys
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Gln	Arg	Gly	Arg	Ser 405	Cys	Asp	Ser	Leu	Asn 410	Asn	Arg	Cys	Glu	Gly 415	Ser
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Val	Thr 450	Cys	Gly	Asp	Gly	Val 455	Ile	Thr	Arg	Ile	Arg 460	Leu	Cys	Asn	Ser
Pro	Ser	Pro	Gln	Met	Asn	Gly	Lys	Pro	Cys	Glu	Gly	Glu	Ala	Arg	Glu

465		470		475		480
Thr Lys Ala Cys	Lys Lys Asp Ala Cys	Pro Ile Asn Gly Gly Trp Gly				
	485	490			495	
Pro Trp Ser	Pro Trp Asp Ile Cys	Ser Val Thr Cys Gly Gly Gly Val				
	500	505			510	
Gln Arg Arg Ser	Arg Leu Cys Asn Asn Pro Thr Pro	Gln Phe Gly Gly				
	515	520			525	
Lys Asp Cys Val Gly	Asp Val Thr Glu Asn Gln Val Cys Asn Lys Gln					
	530	535			540	
Asp Cys Pro Ile Asp	Gly Cys Leu Ser Asn Pro Cys Phe Ala Gly Ala					
	545	550			555	560
Lys Cys Thr Ser Tyr	Pro Asp Gly Ser Trp Lys Cys Gly Ala Cys Pro					
	565	570			575	
Pro Gly Tyr Ser Gly	Asn Gly Ile Gln Cys Lys Asp Val Asp Glu Cys					
	580	585			590	
Lys Glu Val Pro Asp	Ala Cys Phe Asn His Asn Gly Glu His Arg Cys					
	595	600			605	
Lys Asn Thr Asp Pro	Gly Tyr Asn Cys Leu Pro Cys Pro Pro Arg Phe					
	610	615			620	
Thr Gly Ser Gln Pro	Phe Gly Arg Gly Val Glu His Ala Met Ala Asn					
	625	630			635	640
Lys Gln Val Cys Lys	Pro Arg Asn Pro Cys Thr Asp Gly Thr His Asp					
	645	650			655	
Cys Asn Lys Asn Ala	Lys Cys Asn Tyr Leu Gly His Tyr Ser Asp Pro					
	660	665			670	
Met Tyr Arg Cys Glu	Cys Lys Pro Gly Tyr Ala Gly Asn Gly Ile Ile					
	675	680			685	
Cys Gly Glu Asp Thr	Asp Leu Asp Gly Trp Pro Asn Glu Asn Leu Val					
	690	695			700	
Cys Val Ala Asn Ala	Thr Tyr His Cys Lys Lys Asp Asn Cys Pro Asn					
	705	710			715	720
Leu Pro Asn Ser Gly	Gln Glu Asp Tyr Asp Lys Asp Gly Ile Gly Asp					
	725	730			735	
Ala Cys Asp Asp Asp	Asp Asp Asn Asp Lys Ile Pro Asp Asp Arg Asp					
	740	745			750	
Asn Cys Pro Phe His	Tyr Asn Pro Ala Gln Tyr Asp Tyr Asp Arg Asp					
	755	760			765	
Asp Val Gly Asp Arg	Cys Asp Asn Cys Pro Tyr Asn His Asn Pro Asp					

770

775

780

Gln Ala Asp Thr Asp Lys Asn Gly Glu Gly Asp Ala Cys Ala Val Asp  
785 790 795 800

Ile Asp Gly Asp Gly Ile Leu Asn Glu Arg Asp Asn Cys Gln Tyr Val  
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Tyr Asn Val Asp Gln Arg Asp Thr Asp Met Asp Gly Val Gly Asp  
820 825 830

&lt;210&gt; 99

&lt;211&gt; 2760

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 99

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<210> 100

<211> 206

<212> PRT

<213> Homo sapiens

<400> 100

Met Gln Cys Asp Ala Lys Phe Asp Phe Leu Thr Arg Lys His His Cys  
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 20 25 30

Pro Leu Arg Arg Met Cys Phe Val Asp Pro Val Arg Gln Cys Ala Glu  
 35 40 45

Cys Ala Leu Val Ser Leu Lys Glu Ala Glu Phe Tyr Asp Lys Gln Leu  
 50 55 60

Lys Val Leu Leu Ser Gly Ala Thr Phe Leu Val Thr Phe Gly Asn Ser  
 65 70 75 80

Glu Lys Pro Glu Thr Met Thr Cys Arg Leu Ser Asn Asn Gln Arg Tyr  
 85 90 95

Leu Phe Leu Asp Gly Asp Ser His Tyr Glu Ile Glu Ile Val His Ile  
 100 105 110

Ser Thr Val Gln Ile Leu Thr Glu Gly Phe Pro Pro Gly Glu Lys Asp  
 115 120 125

Ile His Ala Tyr Thr Ser Leu Arg Gly Ser Gln Pro Ala Ser Glu Gly  
 130 135 140

Gly Asn Ala Arg Ala Thr Gly Met Phe Leu Gln Tyr Thr Val Pro Gly  
 145 150 155 160

Thr Glu Gly Val Thr Gln Leu Lys Leu Thr Val Val Glu Asp Val Thr  
 165 170 175

Val Gly Arg Arg Gln Ala Val Ala Trp Leu Val Ile Cys Arg Leu Pro  
 180 185 190

Ser Ser Ser Met Asn Leu Gly Thr Ser Asn Ser Thr Trp Gly  
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<210> 101

<211> 673

<212> DNA

<213> Homo sapiens

<400> 101

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cgcgagagtgc gccctggtgt ccctcaagga ggcggagttc tacgacaagc agctcaaagt 240
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ggggctgagc ttg 673
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<210> 102

<211> 202

<212> PRT

<213> Homo sapiens

<400> 102

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Met Gln Cys Asp Ala Lys Phe Asp Phe Leu Thr Arg Lys His His Cys
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Arg Arg Cys Gly Lys Cys Phe Cys Asp Arg Cys Cys Ser Gln Lys Val
      20              25              30

Pro Leu Arg Arg Met Cys Phe Val Asp Pro Val Arg Gln Cys Ala Glu
      35              40              45

Cys Ala Leu Val Ser Leu Lys Glu Ala Glu Phe Tyr Asp Lys Gln Leu
      50              55              60

Lys Val Leu Leu Ser Gly Ala Thr Phe Leu Val Thr Phe Gly Asn Ser
      65              70              75              80

Glu Lys Pro Glu Thr Met Thr Cys Arg Leu Ser Asn Asn Gln Arg Tyr
      85              90              95

Leu Phe Leu Asp Gly Asp Ser His Tyr Glu Ile Glu Ile Val His Ile
      100             105             110

Ser Thr Val Gln Ile Leu Thr Glu Gly Phe Pro Pro Gly Glu Lys Asp
      115             120             125

Ile His Ala Tyr Thr Ser Leu Arg Gly Ser Gln Pro Ala Ser Glu Gly
      130             135             140

Gly Asn Ala Gln Ala Thr Gly Met Phe Leu Gln Tyr Thr Val Pro Gly
      145             150             155             160

Thr Glu Gly Val Thr Gln Leu Lys Leu Thr Val Val Glu Asp Val Thr
      165             170             175
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Val Gly Arg Arg Gln Ala Val Ala Trp Leu Val Ala Met His Lys Ala  
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Ala Lys Leu Leu Tyr Glu Ser Arg Asp Gln  
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<210> 103  
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<212> PRT  
<213> Homo sapiens

<400> 103  
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Pro Phe Gly Leu Glu Glu Pro Gln Trp Val Pro Asp Lys Glu Cys Arg  
35 40 45

Arg Cys Met Gln Cys Asp Ala Lys Phe Asp Phe Leu Thr Arg Lys His  
50 55 60

His Cys Arg Arg Cys Gly Lys Cys Phe Cys Asp Arg Cys Cys Ser Gln  
65 70 75 80

Lys Val Pro Leu Arg Arg Met Cys Phe Val Asp Pro Val Arg Gln Cys  
85 90 95

Ala Glu Cys Ala Leu Val Ser Leu Lys Glu Ala Glu Phe Tyr Asp Lys  
100 105 110

Gln Leu Lys Val Leu Leu Ser Gly Ala Thr Phe Leu Val Thr Phe Gly  
115 120 125

Asn Ser Glu Lys Pro Glu Thr Met Thr Cys Arg Leu Ser Asn Asn Gln  
130 135 140

Arg Tyr Leu Phe Leu Asp Gly Asp Ser His Tyr Glu Ile Glu Ile Val  
145 150 155 160

His Ile Ser Thr Val Gln Ile Leu Thr Glu Gly Phe Pro Pro Gly Gly  
165 170 175

Gly Asn Ala Arg Ala Thr Gly Met Phe Leu Gln Tyr Thr Val Pro Gly  
180 185 190

Thr Glu Gly Val Thr Gln Leu Lys Leu Thr Val Val Glu Asp Val Thr  
195 200 205

Val Gly Arg Arg Gln Ala Val Ala Trp Leu Val Ala Met His Lys Ala  
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Ala Lys Leu Leu Tyr Glu Ser Arg Asp Gln  
225 230

<210> 104  
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 <212> PRT  
 <213> Mus musculus

<400> 104  
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                     20                    25                    30  
 Ala Lys Phe Asp Phe Ile Thr Arg Lys His His Cys Arg Arg Cys Gly  
                     35                    40                    45  
 Lys Cys Phe Cys Asp Arg Cys Cys Ser Gln Lys Val Pro Leu Arg Arg  
                     50                    55                    60  
 Met Cys Phe Val Asp Pro Val Arg Gln Cys Ala Asp Cys Ala Leu Val  
     65                    70                    75                    80  
 Ser His Arg Glu Ala Glu Phe Tyr Asp Lys Gln Leu Lys Val Leu Leu  
                     85                    90                    95  
 Ser Gly Ala Thr Phe Leu Val Thr Phe Gly Asp Ser Glu Lys Pro Glu  
                     100                    105                    110  
 Thr Met Val Cys Arg Leu Ser Asn Asn Gln Arg Cys Leu Val Leu Asp  
     115                    120                    125  
 Gly Asp Ser His Arg Glu Ile Glu Ile Ala His Val Cys Thr Val Gln  
     130                    135                    140  
 Ile Leu Thr Glu Gly Phe Thr Pro Gly Ala Gly Ser Thr Leu Ala Thr  
     145                    150                    155                    160  
 Gly Met Leu Leu Gln Tyr Thr Val Pro Gly Ala Glu Ala Ala Ala Gln  
                     165                    170                    175  
 Leu Arg Leu Met Ala Gly Glu Asp Ala Ser Gly Ser Lys Arg Gln Ala  
                     180                    185                    190  
 Ala Ala Trp Leu Ala Ala Met His Lys Ala Thr Lys Leu Leu Tyr Glu  
     195                    200                    205  
 Ser Arg Asp Gln  
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<210> 105  
 <211> 327  
 <212> PRT  
 <213> Homo sapiens

<400> 105



Pro Ala Glu Arg Trp Val Ser Val Ser Ser Glu Glu Pro Arg Ala Pro  
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 35 40 45  
 Pro Ala His Leu Pro Ala Ala Arg Ser Ala Leu Arg Ala Ser Leu Ala  
 50 55 60  
 Ser Leu Pro Ala Thr Ala Arg Gly Leu Arg Pro Cys Leu Arg Val Arg  
 65 70 75 80  
 Pro Ala Pro Gln Pro Gly Pro Gly Ala Ala Leu Arg Arg Ala Arg Ala  
 85 90 95  
 Ala Arg Ser Pro Ala Arg Ala Gly Ala Ala Met Met Asn Arg Phe Arg  
 100 105 110  
 Lys Trp Leu Tyr Lys Pro Lys Arg Ser Asp Pro Gln Leu Leu Ala Arg  
 115 120 125  
 Phe Tyr Tyr Ala Asp Glu Glu Leu Asn Gln Val Ala Ala Glu Leu Asp  
 130 135 140  
 Ser Leu Asp Gly Arg Lys Asp Pro Gln Arg Cys Thr Leu Leu Val Ser  
 145 150 155 160  
 Gln Phe Arg Ser Cys Gln Asp Asn Val Leu Asn Ile Ile Asn Gln Ile  
 165 170 175  
 Met Asp Glu Cys Ile Pro Gln Asp Arg Ala Pro Arg Asp Phe Cys Val  
 180 185 190  
 Lys Phe Pro Glu Glu Ile Arg His Asp Asn Leu Ala Gly Gln Leu Trp  
 195 200 205  
 Phe Gly Ala Glu Cys Leu Ala Ala Gly Ser Ile Ile Met Asn Arg Glu  
 210 215 220  
 Leu Glu Ser Met Ala Met Arg Pro Leu Ala Lys Glu Leu Thr Arg Ser  
 225 230 235 240  
 Leu Glu Asp Val Arg Gly Ala Leu Arg Asp Gln Ala Leu Arg Asp Leu  
 245 250 255  
 Asn Thr Tyr Thr Glu Lys Met Arg Glu Ala Leu Arg His Phe Asp Val  
 260 265 270  
 Leu Phe Ala Glu Phe Glu Leu Ser Tyr Val Ser Ala Met Val Pro Val  
 275 280 285  
 Lys Ser Pro Arg Glu Tyr Tyr Val Gln Gln Glu Val Ile Val Leu Phe  
 290 295 300

Cys Glu Thr Val Glu Arg Ala Leu Asp Phe Gly Tyr Leu Thr Gln Asp  
 305 310 315 320

Met Ile Asp Asp Tyr Glu Pro  
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<210> 106  
 <211> 173  
 <212> PRT  
 <213> Homo sapiens

<400> 106  
 Leu His His Lys Trp Leu Asn Ser His Ser Gly Arg Pro Ser Thr Thr  
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Ser Ser Pro Asp Gln Pro Ser Arg Ser His Leu Asp Asp Asp Gly Met  
 20 25 30

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 35 40 45

Gly His Gln Gln Glu Val Glu Thr Leu Lys Lys Gln Val Gln Glu Leu  
 50 55 60

Lys Ser Arg Leu Glu Ser Gln Tyr Leu Thr Ser Ser Leu Arg Phe Asn  
 65 70 75 80

Gly Asp Phe Gly Asp Glu Val Met Thr Arg Trp Leu Pro Asp His Leu  
 85 90 95

Ala Ala His Cys Tyr Ala Cys Asp Ser Ala Phe Trp Leu Ala Ser Arg  
 100 105 110

Lys His His Cys Arg Asn Cys Gly Asn Val Phe Cys Ser Ser Cys Cys  
 115 120 125

Asn Gln Lys Val Pro Val Pro Ser Gln Gln Leu Phe Glu Pro Ser Arg  
 130 135 140

Val Cys Lys Ser Cys Tyr Ser Ser Leu His Pro Thr Ser Ser Ser Ile  
 145 150 155 160

Asp Leu Glu Leu Asp Lys Pro Ile Ala Ala Thr Ser Asn  
 165 170

<210> 107  
 <211> 597  
 <212> PRT  
 <213> Mus musculus

<400> 107  
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35					40					45						
Phe	Val	Asn	Leu	Phe	Arg	Phe	Asn	Lys	Glu	Arg	Gly	Glu	Gly	Gly	Gln	
50					55					60						
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65					70					75					80	
Ser	Arg	Thr	Gln	Ser	Val	Arg	Ser	Pro	Val	Pro	Tyr	Lys	Lys	Gln	Leu	
85					90					95						
Asn	Glu	Glu	Leu	His	Arg	Arg	Ser	Ser	Val	Leu	Glu	Asn	Thr	Leu	Pro	
100					105					110						
His	Pro	Gln	Glu	Ser	Thr	Asp	Ser	Arg	Arg	Lys	Ala	Glu	Pro	Ala	Cys	
115					120					125						
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130					135					140						
Val	Leu	Lys	Arg	Leu	Lys	Glu	Ile	Met	Glu	Gly	Lys	Ser	Gln	Asp	Ser	
145					150					155					160	
Asp	Leu	Lys	Gln	Tyr	Trp	Met	Pro	Asp	Ser	Gln	Cys	Lys	Glu	Cys	Tyr	
165					170					175						
Asp	Cys	Ser	Glu	Lys	Phe	Thr	Thr	Phe	Arg	Arg	Arg	His	His	Cys	Arg	
180					185					190						
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195					200					205						
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Arg	Lys	Ile	Ala	Leu	Ser	Tyr	Ala	His	Ser	Thr	Asp	Ser	Asn	Ser	Ile	
225					230					235					240	
Gly	Glu	Asp	Leu	Asn	Ala	Leu	Ser	Asp	Ser	Thr	Cys	Ser	Val	Ser	Ile	
245					250					255						
Leu	Asp	Pro	Ser	Glu	Pro	Arg	Thr	Pro	Val	Gly	Ser	Arg	Lys	Ala	Ser	
260					265					270						
Arg	Asn	Ile	Phe	Leu	Glu	Asp	Asp	Leu	Ala	Trp	Gln	Ser	Leu	Ile	His	
275					280					285						
Pro	Asp	Ser	Ser	Asn	Ser	Ala	Leu	Ser	Thr	Arg	Leu	Val	Ser	Val	Gln	
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Glu	Asp	Ala	Gly	Lys	Ser	Pro	Ala	Arg	Asn	Arg	Ser	Ala	Ser	Ile	Thr	
305					310					315					320	
Asn	Leu	Ser	Leu	Asp	Arg	Ser	Gly	Ser	Pro	Met	Val	Pro	Ser	Tyr	Glu	

	325		330		335
Thr Ser Val Ser Pro Gln Ala Asn Arg Asn Tyr Ile Arg Thr Glu Thr	340		345		350
Thr Glu Asp Glu Arg Lys Ile Leu Leu Asp Ser Ala Gln Leu Lys Asp	355		360		365
Leu Trp Lys Lys Ile Cys His His Thr Ser Gly Met Glu Phe Gln Asp	370		375		380
His Arg Tyr Trp Leu Arg Thr His Pro Asn Cys Ile Val Gly Lys Glu	385		390		395
Leu Val Asn Trp Leu Ile Arg Asn Gly His Ile Ala Thr Arg Ala Gln	405		410		415
Ala Ile Ala Ile Gly Gln Ala Met Val Asp Gly Arg Trp Leu Asp Cys	420		425		430
Val Ser His His Asp Gln Leu Phe Arg Asp Glu Tyr Ala Leu Tyr Arg	435		440		445
Pro Leu Gln Ser Thr Glu Phe Ser Glu Thr Pro Ser Pro Asp Ser Asp	450		455		460
Ser Val Asn Ser Val Glu Gly His Ser Glu Pro Ser Trp Phe Lys Asp	465		470		475
Ile Lys Phe Asp Asp Ser Asp Thr Glu Gln Ile Ala Glu Glu Gly Asp	485		490		495
Asp Asn Leu Ala Lys Tyr Leu Val Ser Asp Thr Gly Gly Gln Gln Leu	500		505		510
Ser Ile Ser Asp Ala Phe Ile Lys Glu Ser Leu Phe Asn Arg Arg Val	515		520		525
Glu Glu Lys Ser Lys Glu Leu Pro Phe Thr Pro Leu Gly Trp His His	530		535		540
Asn Asn Leu Glu Leu Leu Arg Glu Glu Asn Glu Glu Lys Gln Ala Met	545		550		555
Glu Arg Leu Leu Ser Ala Asn His Asn His Met Met Ala Leu Leu Gln	565		570		575
Gln Leu Leu Gln Asn Glu Ser Leu Ser Ser Ser Trp Arg Asp Ile Ile	580		585		590
Val Ser Leu Val Cys	595				

<210> 108  
 <211> 24  
 <212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
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<400> 108

tggttgatg atatgtgcct gtag

24

<210> 109

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
oligonucleotide primer

<400> 109

ttatagtacg agcaagaact ttgg

24

<210> 110

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
oligonucleotide primer

<400> 110

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27

<210> 111

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
oligonucleotide primer

<400> 111

aactactcgt gaggtgagg caggag

26

<210> 112

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
oligonucleotide primer

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 aagtgcagac ctataggcca atacagg 27  
  
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<210> 124  
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<400> 124  
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26

<210> 126

<211> 22

<212> DNA

<213> Artificial Sequence

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<400> 126

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22

<210> 127

<211> 22

<212> DNA

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<223> Description of Artificial Sequence:  
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<400> 127

ggtgaacaga acctacctgt tg

22

<210> 128

<211> 22

<212> DNA

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<223> Description of Artificial Sequence:  
oligonucleotide primer

<400> 128

gctctcgaaa gtgggctata tt

22

<210> 129

<211> 29

<212> DNA

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oligonucleotide primer

<400> 129

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29

<210> 130

<211> 22

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oligonucleotide primer

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<400> 136  
aacactctgt tctgcaatga ca 22

<210> 137  
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oligonucleotide primer

<400> 137  
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<210> 138  
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oligonucleotide primer

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<210> 139  
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oligonucleotide primer

<400> 139  
ctgtgtctcc agagaggtct ga 22

<210> 140  
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<210> 141  
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<400> 141  
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<210> 142  
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oligonucleotide primer

<400> 142  
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<210> 143  
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<210> 144  
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<220>  
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<400> 144  
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<210> 145  
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<400> 145  
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<210> 146  
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<400> 146  
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<210> 147  
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         oligonucleotide primer

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<p>&lt;220&gt;  &lt;223&gt; Description of Artificial Sequence:  oligonucleotide primer</p>	
<p>&lt;400&gt; 148  gggaacggca accagaaac</p>	19
<p>&lt;210&gt; 149  &lt;211&gt; 22  &lt;212&gt; DNA  &lt;213&gt; Artificial Sequence</p>	
<p>&lt;220&gt;  &lt;223&gt; Description of Artificial Sequence:  oligonucleotide primer</p>	
<p>&lt;400&gt; 149  ccagatcctt tctccttgat ct</p>	22
<p>&lt;210&gt; 150  &lt;211&gt; 28  &lt;212&gt; DNA  &lt;213&gt; Artificial Sequence</p>	
<p>&lt;220&gt;  &lt;223&gt; Description of Artificial Sequence:  oligonucleotide primer</p>	
<p>&lt;400&gt; 150  ccaaactttc cagatctttc caaagctg</p>	28
<p>&lt;210&gt; 151  &lt;211&gt; 22  &lt;212&gt; DNA  &lt;213&gt; Artificial Sequence</p>	
<p>&lt;220&gt;  &lt;223&gt; Description of Artificial Sequence:  oligonucleotide primer</p>	
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<p>&lt;210&gt; 152</p>	

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 <400> 154  
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 <210> 155  
 <211> 20  
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         oligonucleotide primer  
  
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 <211> 26  
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oligonucleotide primer

<400> 156

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26

<210> 157

<211> 20

<212> DNA

<213> Artificial Sequence

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oligonucleotide primer

<400> 157

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20

<210> 158

<211> 22

<212> DNA

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<220>

<223> Description of Artificial Sequence:  
oligonucleotide primer

<400> 158

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22

<210> 159

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
oligonucleotide primer

<400> 159

atggaatccc tggccctgtc taatg

25